

Wood Kitchen Cabinet and Counter Top Manufacturing

1997

Issued October 1999

EC97M-3371A

1997 Economic Census

Manufacturing

Industry Series



U S C E N S U S B U R E A U

Helping You Make Informed Decisions

U.S. Department of Commerce
Economics and Statistics Administration
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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337110	Wood kitchen cabinet & counter top mfg	7 875	7 962	99 117	2 315 701	79 535	151 102	1 640 760	5 181 213	3 891 437	9 071 456	243 096
243400	Wood kitchen cabinets	N	5 095	79 161	1 857 363	63 326	121 845	1 325 979	4 298 963	3 144 384	7 443 910	191 689
254110	Wood partitions & fixtures (pt)	N	813	10 065	259 753	7 423	13 585	159 224	539 976	424 875	962 130	31 277
571205	Furniture stores (pt)	N	2 054	9 891	198 585	8 786	15 672	155 557	342 274	322 178	665 416	20 130

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337110, WOOD KITCHEN CABINET & COUNTER TOP MFG												
United States	1	7 962	834	99 117	2 315 701	79 535	151 102	1 640 760	5 181 213	3 891 437	9 071 456	243 096
Alabama	2	269	17	3 702	70 844	3 027	4 845	43 384	142 567	93 538	234 585	9 964
Arizona	1	132	24	1 957	44 327	1 529	2 854	28 074	124 267	58 870	183 083	2 490
Arkansas	2	91	5	687	11 160	583	903	8 516	23 535	16 490	40 243	1 487
California	3	912	72	7 991	198 641	6 083	11 532	127 736	405 488	288 815	695 407	16 170
Colorado	2	152	14	1 278	30 557	989	1 900	20 477	63 947	55 904	119 864	2 909
Connecticut	2	93	8	909	26 593	747	1 421	19 237	53 139	32 289	84 940	3 682
Florida	4	589	44	4 081	83 574	3 217	5 286	57 104	154 005	118 013	270 958	6 494
Georgia	1	350	36	3 520	71 116	2 919	5 214	51 624	196 919	141 373	337 971	8 567
Idaho	3	67	3	359	7 159	299	456	5 301	13 449	9 915	23 372	488
Illinois	2	323	30	3 656	95 118	2 953	5 624	66 139	201 430	142 691	345 193	7 165
Indiana	-	190	49	5 674	141 234	4 766	9 523	107 045	394 538	304 176	698 860	18 173
Iowa	-	74	7	2 473	57 864	2 119	4 044	47 625	119 713	104 293	224 499	5 591
Kansas	1	82	17	2 076	43 787	1 713	3 212	32 496	105 108	70 097	174 530	3 506
Kentucky	2	101	16	1 297	28 027	1 028	1 782	18 890	52 388	36 727	89 161	5 525
Louisiana	2	67	4	466	8 531	380	609	6 599	16 000	13 678	29 678	878
Maine	3	32	-	126	2 729	94	168	1 923	5 538	3 846	9 410	146
Maryland	2	95	5	749	18 344	559	1 054	11 942	29 919	21 742	51 776	994
Massachusetts	3	111	10	797	23 590	620	1 287	16 643	45 124	34 282	79 782	1 095
Michigan	1	169	11	1 647	40 600	1 334	2 375	29 468	99 429	88 855	188 098	2 884
Minnesota	1	241	24	3 829	90 038	3 134	5 912	67 527	222 382	162 350	384 500	6 946
Mississippi	3	71	8	785	14 729	653	1 007	10 136	29 190	27 853	56 870	1 035
Missouri	1	220	20	2 156	51 692	1 735	3 214	36 855	87 313	67 095	154 509	4 668
Nebraska	1	46	5	495	9 188	419	665	6 563	22 144	20 873	43 052	3 164
Nevada	-	42	8	700	16 858	601	1 199	12 891	46 669	41 018	87 402	1 289
New Jersey	2	186	14	1 286	36 331	1 044	1 888	25 166	62 276	49 319	111 074	3 155
New York	3	345	27	2 534	61 327	2 014	3 810	44 506	115 228	88 578	203 954	4 973
North Carolina	2	248	21	2 510	59 946	2 040	4 283	43 446	106 730	86 752	193 611	5 303
North Dakota	-	30	5	562	13 234	360	679	7 524	25 134	21 183	46 151	2 152
Ohio	-	311	26	6 471	173 600	5 243	11 433	125 026	514 048	442 305	956 766	39 725
Oklahoma	4	69	9	674	13 831	558	990	10 584	25 916	16 805	42 950	1 852
Oregon	1	172	22	2 153	49 826	1 687	3 123	35 257	87 984	81 822	174 330	3 020
Pennsylvania	1	326	53	7 339	183 083	5 745	11 596	135 055	394 122	270 088	665 282	15 241
South Carolina	3	97	6	615	12 956	518	869	9 498	25 192	18 393	43 380	1 193
South Dakota	-	34	7	896	20 193	715	1 371	14 201	57 378	32 612	89 824	2 093
Tennessee	3	230	30	2 151	40 413	1 792	2 996	29 710	78 557	77 281	155 428	3 745
Texas	1	400	63	8 381	174 668	6 702	13 833	123 256	408 206	323 820	731 586	25 250
Utah	1	122	22	1 921	44 368	1 465	2 604	30 866	81 705	51 372	133 135	3 072
Virginia	2	212	16	2 964	69 349	2 461	4 799	52 744	224 614	144 618	367 150	4 553
Washington	1	216	28	2 805	67 370	2 236	4 360	45 227	125 841	89 932	215 581	4 549
West Virginia	2	26	3	267	4 681	218	354	3 608	7 533	5 792	13 103	224
Wisconsin	1	199	32	2 690	70 527	2 056	3 965	47 829	124 223	90 905	214 453	5 278

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337110, WOOD KITCHEN CABINET & COUNTER TOP MFG		337110, WOOD KITCHEN CABINET & COUNTER TOP MFG—Con.	
Companies ¹	7 875	Value added	\$1,000.. 5 181 213
All establishments	7 962	Total inventories, beginning of year	\$1,000.. 819 672
Establishments with 1 to 19 employees	7 128	Finished goods inventories, beginning of year	\$1,000.. 210 730
Establishments with 20 to 99 employees	705	Work-in-process inventories, beginning of year	\$1,000.. 208 551
Establishments with 100 employees or more	129	Materials and supplies inventories, beginning of year	\$1,000.. 400 391
All employees	99 117	Total inventories, end of year	\$1,000.. 856 604
Total compensation ²	2 792 799	Finished goods inventories, end of year	\$1,000.. 213 458
Annual payroll	2 315 701	Work-in-process inventories, end of year	\$1,000.. 207 017
Total fringe benefits	477 098	Materials and supplies inventories, end of year	\$1,000.. 436 129
Production workers, average for year	79 535	Gross book value of total assets at beginning of year	\$1,000.. 2 216 489
Production workers on March 12	78 029	Total capital expenditures (new and used)	\$1,000.. 243 096
Production workers on May 12	79 495	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 55 469
Production workers on August 12	80 232	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 187 627
Production workers on November 12	80 384	Total retirements ²	\$1,000.. 43 030
Production-worker hours	151 102	Gross book value of total assets at end of year	\$1,000.. 2 416 555
Production-worker wages	1 640 760	Total depreciation during year ²	\$1,000.. 157 323
Total cost of materials	3 891 437	Total rental payments ²	\$1,000.. 198 033
Cost of materials, parts, containers, etc., consumed	3 544 422	Buildings and other structures rental payments ²	\$1,000.. 102 088
Cost of resales	189 330	Machinery and equipment rental payments ²	\$1,000.. 95 945
Cost of fuels	31 261	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 10 688
Cost of purchased electricity	69 529	Response coverage ratio ⁴	percent.. 71
Cost of contract work	56 895	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 37 923
Quantity of electricity purchased for heat and power	1 116 604	Response coverage ratio ⁴	percent.. 71
Quantity of electricity generated less sold for heat and power	1 077	Cost of purchased communications services ³	\$1,000.. 18 886
Total value of shipments	9 071 456	Response coverage ratio ⁴	percent.. 71
Primary products value of shipments	8 326 371	Cost of purchased legal services ³	\$1,000.. 7 295
Secondary products value of shipments	461 506	Response coverage ratio ⁴	percent.. 71
Total miscellaneous receipts	283 579	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 9 195
Value of resales	243 754	Response coverage ratio ⁴	percent.. 71
Contract receipts	13 468	Cost of purchased advertising services ³	\$1,000.. 27 593
Other miscellaneous receipts	26 357	Response coverage ratio ⁴	percent.. 71
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³	\$1,000.. 6 074
Value of primary products shipments made in all industries	\$1,000.. 8 547 490	Response coverage ratio ⁴	percent.. 71
Value of primary products shipments made in this industry	\$1,000.. 8 326 371	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 12 433
Value of primary products shipments made in other industries	\$1,000.. 221 119	Response coverage ratio ⁴	percent.. 71
Coverage ratio	percent.. 97		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337110. WOOD KITCHEN CABINET & COUNTER TOP MFG												
All establishments	1	7 962	834	99 117	2 315 701	79 535	151 102	1 640 760	5 181 213	3 891 437	9 071 456	243 096
Establishments with 1 to 4 employees	7	4 248	—	8 760	170 095	7 695	11 701	128 662	315 024	257 762	573 675	15 730
Establishments with 5 to 9 employees	4	1 782	—	11 762	252 220	9 462	16 076	190 722	456 237	356 894	814 927	22 498
Establishments with 10 to 19 employees	2	1 098	—	14 757	332 626	11 580	20 715	240 503	630 673	483 580	1 115 532	27 864
Establishments with 20 to 49 employees	2	558	558	16 746	410 559	12 909	24 307	271 978	764 969	534 155	1 298 386	40 474
Establishments with 50 to 99 employees	2	147	147	10 042	258 329	7 748	15 442	167 296	462 174	372 818	831 371	22 022
Establishments with 100 to 249 employees	1	85	85	13 535	319 573	11 033	22 143	221 487	754 947	617 088	1 371 899	33 715
Establishments with 250 to 499 employees	—	30	30	9 754	230 025	8 039	16 788	169 445	866 174	571 771	1 438 303	24 413
Establishments with 500 to 999 employees	—	9	9	6 176	151 551	5 248	11 574	123 464	367 885	288 942	656 541	17 218
Establishments with 1,000 to 2,499 employees	—	5	5	7 585	190 723	5 821	12 356	127 203	563 130	408 427	970 822	39 162
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	3 991	—	11 450	204 965	9 695	14 017	151 219	365 210	299 074	665 584	18 317

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337110	Wood kitchen cabinet & counter top mfg	7 962	99 117	2 315 701	79 535	151 102	1 640 760	5 181 213	3 891 437	9 071 456	243 096
3371101	Wood kitchen cabinets and cabinetwork, stock line	386	31 318	744 104	25 645	53 247	536 367	2 223 583	1 681 427	3 902 613	104 105
3371104	Wood kitchen cabinets and cabinetwork, custom, except sold directly to customer at retail	1 178	26 441	654 191	20 471	39 709	460 473	1 184 742	792 264	1 975 228	46 343
3371107	Wood vanities and other cabinetwork	120	3 749	94 224	3 010	6 109	67 034	240 282	184 147	426 493	11 950
337110A	Plastics laminated wood kitchen cabinet tops	344	7 141	188 762	5 261	10 151	115 845	409 514	329 999	735 700	25 470
337110E	Plastics laminated fixture tops (including drainboards and tops for sinks, cabinets, counters, and fixtures), except kitchen	59	847	24 172	562	1 051	14 242	49 293	34 090	83 697	1 699
337110H	Wood kitchen cabinets and cabinetwork, custom	754	5 833	123 710	5 057	9 486	95 388	212 995	195 484	409 202	12 254

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337110	Wood kitchen cabinets and countertops	N	X	X	8 547 490	N	X	X	N
3371101	Wood kitchen cabinets and cabinetwork, stock line.....	N	X	X	3 178 070	N	X	X	1 960 717
33711011	Wood kitchen cabinets and cabinetwork, stock line.....	N	X	X	3 054 177	N	X	X	N
3371101111	Wood kitchen cabinets and cabinetwork, stock line, except plastics laminated								
3371101121	Wood kitchen cabinets and cabinetwork, stock line, plastics laminated	349	X	^p 28 155.5	2 701 468	279	X	^p 21 357.9	1 671 126
3371101121	Wood kitchen cabinets and cabinetwork, stock line, plastics laminated	92	X	X	352 709	100	X	X	176 490
3371101Y	Wood kitchen cabinets and cabinetwork, stock line, nsk	N	X	X	123 893	N	X	X	N
3371101YWV	Wood kitchen cabinets and cabinetwork, stock line, nsk	N	X	X	123 893	N	X	X	113 101
3371104	Wood kitchen cabinets and cabinetwork, custom, except sold directly to customer at retail.....	N	X	X	1 826 917	N	X	X	1 418 315
33711041	Wood kitchen cabinets and cabinetwork, custom, except sold directly to customer at retail.....	N	X	X	1 647 914	N	X	X	N
3371104111	Wood kitchen cabinets and cabinetwork, custom, except plastics laminated, except sold directly to customer at retail	1 043	X	X	1 400 315	1 047	X	X	929 107
3371104121	Wood kitchen cabinets and cabinetwork, custom, plastics laminated, except sold directly to customer at retail	386	X	X	247 599	448	X	X	303 477
3371104Y	Wood kitchen cabinets and cabinetwork, custom, nsk	N	X	X	179 003	N	X	X	N
3371104YWV	Wood kitchen cabinets and cabinetwork, custom, nsk	N	X	X	179 003	N	X	X	185 731
3371107	Wood vanities and other cabinetwork	N	X	X	840 922	N	X	X	529 988
33711071	Wood vanities and other cabinetwork	N	X	X	797 882	N	X	X	N
3371107111	Wood vanities and other cabinetwork, stock line.....	118	X	^p 6 883.2	545 375	121	X	^q 3 048.1	269 863
3371107121	Wood vanities and other cabinetwork, custom	462	X	X	252 507	421	X	X	206 884
3371107Y	Vanities and other cabinetwork, nsk	N	X	X	43 040	N	X	X	N
3371107YWV	Vanities and other cabinetwork, nsk	N	X	X	43 040	N	X	X	53 241
337110A	Plastics laminated wood kitchen cabinet tops	N	X	X	699 381	N	X	X	N
337110A1	Plastics laminated wood kitchen cabinet tops	N	X	X	532 405	N	X	X	N
337110A111	Plastics laminated wood kitchen cabinet tops, stock line.....	114	X	X	296 377	N	X	X	N
337110A121	Plastics laminated wood kitchen cabinet tops, custom	248	X	X	236 028	N	X	X	N
337110AY	Plastics laminated wood kitchen cabinet tops, nsk	N	X	X	166 976	N	X	X	N
337110AYWV	Plastics laminated wood kitchen cabinet tops, nsk	N	X	X	166 976	N	X	X	N
337110E	Plastics laminated fixture tops (including drainboards and tops for sinks, cabinets, counters, and fixtures), except kitchen	N	X	X	131 544	N	X	X	N
337110E1	Plastics laminated wood cabinet tops, except kitchen	N	X	X	131 544	N	X	X	N
337110E111	Plastics laminated wood cabinet tops, except kitchen, stock line.....	53	X	X	48 198	N	X	X	N
337110E121	Plastics laminated wood cabinet tops, except kitchen, custom	137	X	X	83 346	N	X	X	N
337110EY	Plastics laminated wood cabinet tops, except kitchen, nsk	N	X	X	-	N	X	X	N
337110EYWV	Plastics laminated wood cabinet tops, except kitchen, nsk	N	X	X	-	N	X	X	N
337110H	Wood kitchen cabinets and cabinetwork (permanent installation), custom, sold directly to customer at retail	N	X	X	394 122	N	X	X	N
337110H1	Wood kitchen cabinets and cabinetwork (permanent installation), custom, sold directly to customer at retail	N	X	X	394 122	N	X	X	N
337110H100	Wood kitchen cabinets and cabinetwork (permanent installation), custom, sold directly to customer at retail	667	X	X	394 122	N	X	X	N

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337110	Wood kitchen cabinets and countertops—Con.								
337110W	Wood kitchen cabinet and countertops, nsk, total	N	X	X	1 476 534	N	X	X	N
337110WY	Wood kitchen cabinet and countertop manufacturing, nsk, total	N	X	X	1 476 534	N	X	X	N
337110WYWW	Wood kitchen cabinet and countertop manufacturing, nsk, for nonadministrative-record establishments	N	X	X	848 065	N	X	X	N
337110WYWY	Wood kitchen cabinet and countertop manufacturing, nsk, for administrative-record establishments	N	X	X	628 469	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371101	WOOD KITCHEN CABINETS AND CABINETWORK, STOCK LINE		
	United States	3 178 070	1 960 717
	Alabama	112 658	N
	Arizona	90 302	55 986
	Arkansas	13 132	23 661
	California	83 475	80 591
	Colorado	20 141	17 330
	Connecticut	16 734	9 818
	Florida	43 621	37 776
	Georgia	144 148	66 531
	Idaho	2 155	N
	Indiana	372 770	197 855
	Kansas	80 797	49 852
	Maryland	4 292	3 853
	Massachusetts	9 208	N
	Minnesota	147 580	161 360
	Mississippi	12 700	14 590
	Missouri	20 759	2 146
	New Hampshire	2 271	N
	New Jersey	13 141	6 615
	New York	17 504	20 622
	North Carolina	61 535	77 304
	Oregon	53 794	55 320
	Pennsylvania	247 484	101 952
	Tennessee	50 939	49 223
	Texas	334 966	101 475
	Utah	45 509	28 966
	Virginia	269 188	N
	Washington	64 632	58 547
	Wisconsin	21 148	22 076
3371104	WOOD KITCHEN CABINETS AND CABINETWORK, CUSTOM, EXCEPT SOLD DIRECTLY TO CUSTOMER AT RETAIL		
	United States	1 826 917	1 418 315
	Alabama	26 726	23 423
	Arizona	21 512	15 418
	Arkansas	4 263	3 298
	California	162 459	180 459
	Colorado	14 413	6 912
	Connecticut	34 429	25 764
	Florida	54 091	59 439
	Georgia	47 104	28 499
	Idaho	6 630	4 988
	Illinois	57 095	31 752

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371104	WOOD KITCHEN CABINETS AND CABINETWORK, CUSTOM, EXCEPT SOLD DIRECTLY TO CUSTOMER AT RETAIL—Con.		
	Indiana	99 699	81 560
	Iowa	131 255	64 375
	Kansas	42 157	19 296
	Kentucky	24 540	17 003
	Louisiana	6 950	5 261
	Maryland	8 982	10 844
	Massachusetts	22 319	21 028
	Michigan	22 748	15 360
	Minnesota	131 941	103 383
	Mississippi	9 650	2 132
	Missouri	41 669	38 116
	Montana	2 791	N
	Nebraska	8 140	6 152
	Nevada	3 241	7 735
	New Hampshire	3 164	5 091
	New Jersey	32 842	26 030
	New Mexico	3 831	6 424
	New York	39 952	43 514
	North Carolina	35 994	21 147
	North Dakota	5 098	3 066
	Ohio	86 742	51 328
	Oklahoma	15 593	12 354
	Oregon	37 755	54 715
	Pennsylvania	224 607	172 339
	South Carolina	6 318	7 919
	South Dakota	20 052	N
	Tennessee	30 380	20 514
	Texas	98 350	60 775
	Utah	30 062	24 792
	Vermont	3 458	N
	Virginia	20 720	22 191
	Washington	63 609	32 633
Wisconsin	72 942	45 853	
3371107	WOOD VANITIES AND OTHER CABINETWORK		
	United States	840 922	529 988
	Alabama	15 864	8 802
	Arizona	8 573	5 244
	Arkansas	3 928	5 197
	California	114 260	58 120
	Colorado	9 729	6 905
	Connecticut	4 487	4 489
	Florida	12 766	16 383
	Georgia	10 930	4 820
	Illinois	45 175	30 026
	Indiana	60 715	66 336
	Kansas	10 634	3 781
	Kentucky	2 680	2 055
	Louisiana	2 744	2 512
	Massachusetts	2 423	11 537
	Michigan	15 849	15 987
	Minnesota	31 841	23 066
	Missouri	17 532	14 705
	Nebraska	3 283	2 132
	Nevada	8 112	5 373
	New Jersey	4 335	12 480
	New York	9 140	6 410
	North Carolina	16 258	14 041
	Ohio	94 221	37 944
	Oklahoma	2 762	N
	Oregon	10 754	10 120
	Pennsylvania	59 232	35 722
	Tennessee	11 455	7 007
	Texas	87 853	17 457
	Utah	14 155	13 459
	Virginia	16 166	13 240
	Washington	16 277	11 194
West Virginia	3 076	N	
Wisconsin	10 886	7 247	
337110A	PLASTICS LAMINATED WOOD KITCHEN CABINET TOPS		
	United States	699 381	N
	Alabama	11 026	N
	Arizona	14 484	N
	California	39 498	N
	Colorado	30 226	N
	Connecticut	2 421	N
	Florida	17 797	N
	Georgia	42 334	N
	Idaho	2 198	N
	Illinois	27 307	N
	Indiana	92 478	N

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)		
		1997	1992	
337110A	PLASTICS LAMINATED WOOD KITCHEN CABINET TOPS—Con.			
	Iowa	18 671	N	
	Kansas	9 832	N	
	Kentucky	9 957	N	
	Maryland	10 068	N	
	Massachusetts	17 731	N	
	Michigan	13 804	N	
	Minnesota	9 174	N	
	Missouri	20 321	N	
	Nevada	4 695	N	
	New Hampshire	4 932	N	
	New Jersey	11 407	N	
	New Mexico	2 205	N	
	New York	21 496	N	
	North Carolina	4 601	N	
	Ohio	31 475	N	
	Oregon	8 668	N	
	Pennsylvania	40 628	N	
	South Dakota	23 268	N	
	Tennessee	10 814	N	
	Texas	35 264	N	
	Utah	4 648	N	
	Virginia	12 289	N	
	Washington	12 762	N	
	Wisconsin	40 482	N	
	337110E	PLASTICS LAMINATED FIXTURE TOPS (INCLUDING DRAINBOARDS AND TOPS FOR SINKS, CABINETS, COUNTERS, AND FIXTURES), EXCEPT KITCHEN		
		United States	131 544	N
Arizona		8 243	N	
California		25 768	N	
Colorado		4 163	N	
Florida		5 705	N	
Illinois		7 037	N	
Indiana		7 744	N	
Kansas		3 712	N	
Massachusetts		2 214	N	
Michigan		6 479	N	
Minnesota		4 658	N	
New Jersey		3 094	N	
New York		5 082	N	
Ohio		7 664	N	
Pennsylvania		3 148	N	
Texas		6 284	N	
Wisconsin		8 500	N	
337110H		WOOD KITCHEN CABINETS AND CABINETWORK (PERMANENT INSTALLATION), CUSTOM, SOLD DIRECTLY TO CUSTOMER AT RETAIL		
		United States	394 122	N
		Alabama	11 626	N
		Alaska	2 872	N
		Arizona	18 341	N
		Arkansas	7 643	N
		California	32 209	N
		Colorado	16 129	N
		Connecticut	5 128	N
	Florida	32 023	N	
	Georgia	23 940	N	
	Idaho	2 068	N	
	Illinois	11 139	N	
	Indiana	10 342	N	
	Iowa	2 576	N	
	Kansas	3 354	N	
	Kentucky	11 483	N	
	Louisiana	3 495	N	
	Maryland	2 841	N	
	Massachusetts	3 281	N	
	Michigan	6 669	N	
	Minnesota	13 638	N	
	Mississippi	4 986	N	
	Missouri	15 036	N	
	Nebraska	2 248	N	
	Nevada	5 168	N	
	New Jersey	4 789	N	
New Mexico	2 294	N		
New York	18 750	N		
North Carolina	12 012	N		
Ohio	10 618	N		
Oklahoma	3 831	N		
Oregon	12 469	N		
Pennsylvania	7 988	N		
South Carolina	7 296	N		
South Dakota	2 394	N		
Tennessee	10 394	N		

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
337110H	WOOD KITCHEN CABINETS AND CABINETWORK (PERMANENT INSTALLATION), CUSTOM, SOLD DIRECTLY TO CUSTOMER AT RETAIL—Con.		
	Texas	17 700	N
	Utah	2 785	N
	Virginia	7 277	N
	Washington	11 808	N
	Wisconsin	8 168	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337110	WOOD KITCHEN CABINET & COUNTER TOP MFG				
32191203	Hardwood cut stock and dimension, excluding furniture frames	X	308 575	X	N
32121105	Hardwood veneer	X	60 616	X	N
32121101	Hardwood plywood	X	179 232	X	N
32121201	Softwood plywood	X	26 502	X	N
32121903	Particleboard (wood)	X	362 040	X	N
32121909	Hardboard	X	32 062	X	N
32121907	Medium density fiberboard (MDF)	X	46 381	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	82 711	X	N
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
32100025	Hardwood lumber, rough and dressed	X	388 922	X	N
32100031	Softwood lumber, rough and dressed	X	23 649	X	N
32721101	Flat glass (plate, float, and sheet)	X	D	X	N
32552001	Adhesives and sealants	X	38 224	X	N
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	204 373	X	N
32610017	Plastics parts, components, sheets, and other shapes (excluding plastics resins)	X	131 429	X	N
00970099	All other materials and components, parts, containers, and supplies	X	373 902	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 274 933	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337110 WOOD KITCHEN CABINET AND COUNTERTOP MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing wood or plastics laminated on wood kitchen cabinets, bathroom vanities, and countertops (except freestanding). The cabinets and counters may be made on a stock or custom basis.

The data published with NAICS code 3371110 include the following SIC industries:

- 2434 Wood kitchen cabinets
- 2541 Wood partitions and fixtures (pt)
- 5712 Furniture stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337110 include establishments primarily engaged in manufacturing wood counter tops as part of wood office and store fixtures. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127W pt	39990 pt	39990 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	2599000 pt	2599000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	5712002 pt	5712002 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	2541000 pt	2541000 pt	33712241	25145	25145	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	5712000 pt	5712000 pt	3371241111	2514512	2514512	337127WYVW pt	3999002 pt	3999002 pt
337110WYVW pt	2434002	2434002	3371241121	2514513	2514513	3371290	25170	25170
337110WYVW pt	2541002 pt	2541002 pt	3371241131	2514515	2514515	3371290111	2517015	2517015
337110WYVW pt	5712002 pt	5712000 pt	3371241141	2514517	2514517	3371290211	2517018	2517018
3371211	25120 pt	25120 pt	3371241151	2514521	2514521	3371290221	2517021	2517021
3371211 pt	57121 pt	57120 pt	3371241161	2514527	2514527	3371290YVW	2517000	2517000
3371211111	2512012	2512012	3371241171	2514597	2514597	3371290YVW	2517002	2517002
3371211121	2512041	2512041	3371241YVW	2514500	2514500	3372111	25212	25210 pt
3371211311	2512045	2512045	3371244	25146	25146	3372111111	2521211	2521000 pt
3371211411	2512054	2512054	3371244111	2514612	2514612	3372111121	2521213	2521000 pt
3371211511	2512031	2512031	3371244211	2514622	2514622	3372111131	2521214	2521000 pt
3371211521	2512035	2512035	3371244231	2514624	2514624	3372111141	2521217	2521000 pt
3371211531 pt	2512098	2512098	3371244241	2514698	2514698	3372111151	2521219	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244YVW	2514600	2514600	3372111161	2521221	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371247	25147	25147	3372111YVW	2521200	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371247111	2514733	2514733	3372114	25213	25210 pt
3371214	25155	25155	3371247121	2514737	2514737	3372114111	2521311	2521000 pt
3371214100	2515500	2515500	3371247211	2514775	2514775	3372114121	2521313	2521000 pt
337121W pt	25120 pt	25120 pt	3371247221	2514782	2514782	3372114YVW	2521300	2521000 pt
337121W pt	25150 pt	25150 pt	3371247231	2514783	2514783	3372117	25214	25210 pt
337121W pt	57120 pt	57120 pt	3371247241	2514788	2514788	3372117111	2521411	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247291 pt	2514789 pt	2514771	3372117211	2521413	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247291 pt	2514789 pt	2514798	3372117311	2521415	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247YVW	2514700	2514700	3372117321	2521417	2521000 pt
337121WYVW pt	2512002	2512002	337124W	25140	25140	3372117331	2521419	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	337124WYVW	2514000	2514000	3372117341	2521425	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	337124WYVW	2514002	2514002	3372117351	2521427	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	3372117361	2521429	2521000 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	3372117YVW	2521400	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	337211A	25217	25210 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A111	2521711	2521000 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A121	2521713	2521000 pt
3371221231	2511271	2511271	3371250311 pt	2519015 pt	2519025	337211A131	2521715	2521000 pt
3371221241	2511281	2511281	3371250321	2519098	2519098	337211A141	2521719	2521000 pt
3371221311	2511233	2511233	3371250YVW	2519000	2519000	337211AYVW	2521700	2521000 pt
3371221321	2511235	2511235	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221391	2511291	2511291	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	2511298	2511298	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221395 pt	5712111	5712000 pt	3371271121	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	2511200	2511200	3371271221	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224	25113	25113	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224111	2511311	2511311	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224211	2511331	2511331	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224311	2511351	2511351	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224321	2511371	2511371	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371224391	2511391	2511391	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
3371224395	2511399	2511399	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371224YVW	2511300	2511300	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
3371227	25115	25115	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541339 pt
3371227111	2511511	2511511	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227121	2511513	2511513	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227131	2511515	2511515	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227141	2511517	2511517	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227211	2511521	2511521	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
3371227311	2511535	2511535	3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWWW pt...	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWWW pt...	2541000 pt	2541000 pt
3372141121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWWW pt...	2542000	2542000
3372141211	2522114	2522100 pt	3372157	25421	25421	337215WYWWW pt...	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157111	2542113	2542113	337215WYWWW pt...	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157121	2542117	2542117	337215WYWWW pt...	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157131	2542119	2542119	337215WYWWW pt...	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157YVW	2542100	2542100	337215WYWWW pt...	3499002 pt	3499002 pt
3372144	25225	25225	337215A	25422	25422	3379101	25151	25151
3372144111	2522511	2522500 pt	337215A111	2542233	2542233	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
3372147311	2522619	2522600 pt	337215E111	2542341	2542341	3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E121	2542343	2542343	3379107	25153	25153
3372147421	2522613	2522600 pt	337215E131	2542345	2542345	3379107111	2515315	2515315
3372147431	2522625	2522600 pt	337215E141	2542347	2542347	3379107121	2515317	2515317
3372147441	2522627	2522600 pt	337215E151	2542349	2542349	3379107131	2515319	2515319
3372147451	2522629	2522600 pt	337215EYVW	2542300	2542300	3379107YVW	2515300	2515300
3372147YVW	2522600	2522600 pt	337215H pt	25424	25424	337910A	25156	25156
337214A	25227	25227	337215H111 pt	34998 pt	34998 pt	337910A111	2515613	2515613
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337214A211	2522713	2522700 pt	337215H211 pt	2542461 pt	2542467 pt	337910AYVW	2515600	2515600
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337214AYVW	2522700	2522700 pt	337215H321	2542471	2542471	337910WYVW	2515002 pt	2515002 pt
337214W	25220	25220	337215H331	2542499	2542499	3379201	25913	25913
337214WYVW	2522000	2522000	337215H341	3499896	3499899 pt	3379201111	2591311	2591311
337214WYVW	2522002	2522002	337215H351	3499897	3499899 pt	3379201121	2591313	2591313
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201131	2591315	2591315
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201YVW	2591300	2591300
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3372151131	2541419	2541131 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
3372151YVW	2541400	2541100 pt	337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335	337215W pt	24260 pt	24260 pt	3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
3372154121 pt	2541613 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207YVW	2591500	2591500
3372154131 pt	2541615 pt	2541338 pt	337215W pt	25410 pt	25410 pt	337920W	25910	25910
3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYVW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Upholstered Household Furniture Manufacturing

1997

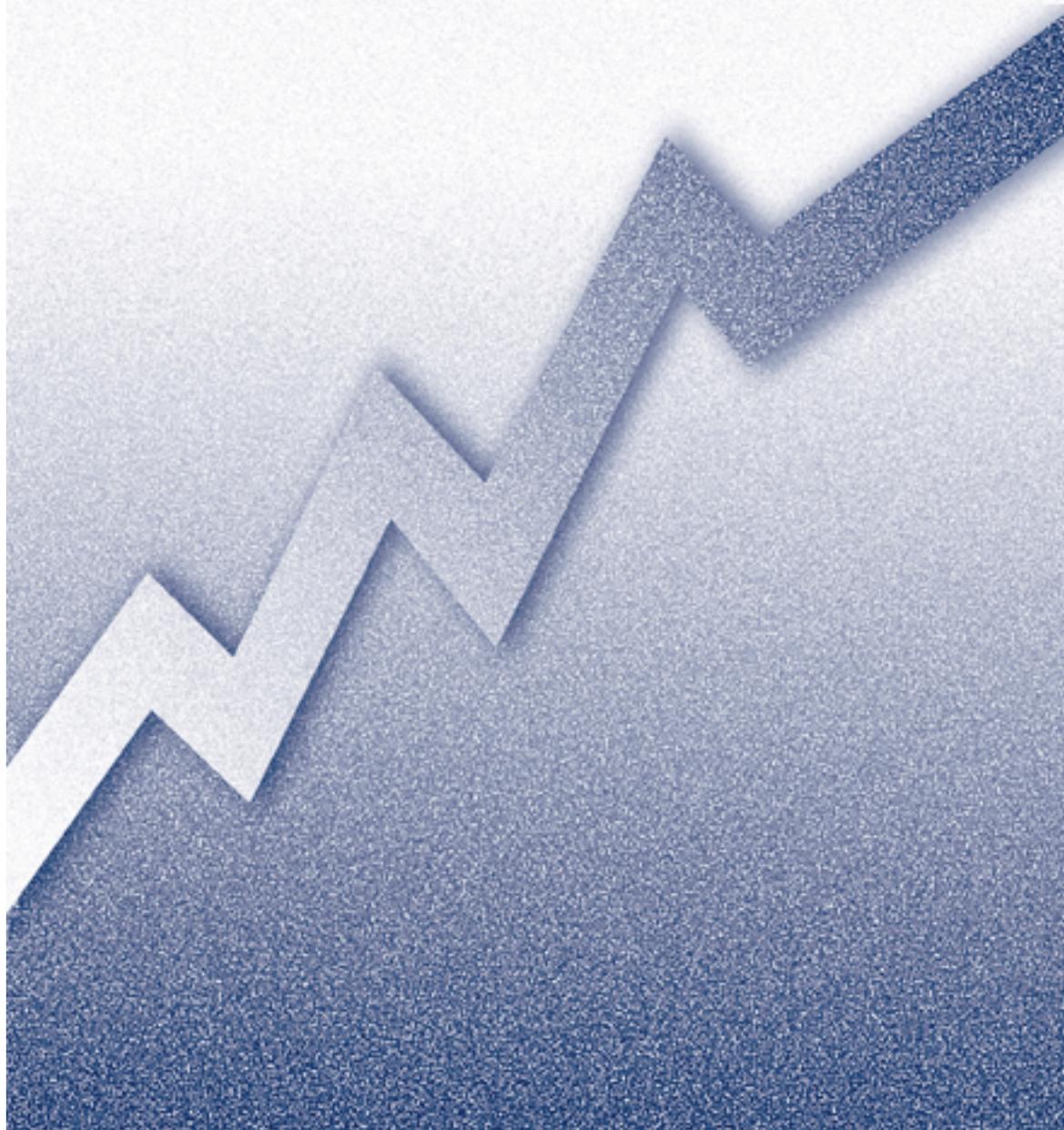
Issued October 1999

EC97M-3371B

1997 Economic Census

Manufacturing

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Upholstered Household Furniture Manufacturing

1997

Issued October 1999

EC97M-3371B

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337121	Upholstered household furniture mfg	1 565	1 706	90 008	2 022 565	77 440	144 227	1 535 379	4 082 196	4 321 726	8 398 652	107 015
251200	Upholstered household furniture	N	1 095	85 257	1 930 167	73 430	137 215	1 466 033	3 914 321	4 124 412	8 034 031	96 972
251510	Mattresses & bedsprings (pt) ..	N	35	1 601	31 760	1 259	2 338	22 145	62 483	96 757	159 199	4 287
571210	Furniture stores (pt)	N	576	3 150	60 638	2 751	4 674	47 201	105 392	100 557	205 422	5 756

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337121, UPHOLSTERED HOUSEHOLD FURNITURE MFG												
United States	1	1 706	534	90 008	2 022 565	77 440	144 227	1 535 379	4 082 196	4 321 726	8 398 652	107 015
Arizona	3	24	7	334	7 141	293	477	5 337	9 935	13 672	23 853	559
California	1	294	88	8 792	194 154	7 508	14 665	144 771	425 209	452 770	880 622	7 745
Colorado	7	15	1	102	1 647	93	118	1 163	2 895	3 002	5 890	107
Connecticut	5	16	1	122	2 769	106	165	1 977	5 298	4 023	9 104	201
Florida	4	93	8	816	14 594	711	1 236	11 003	30 131	31 655	61 725	710
Georgia	4	25	8	915	14 346	789	1 420	11 079	28 661	42 541	70 838	1 826
Idaho	2	4	2	282	5 250	259	477	3 911	9 759	10 416	20 227	284
Illinois	4	52	7	669	12 000	581	983	9 906	20 854	16 599	37 718	489
Indiana	-	34	13	2 427	61 024	2 095	4 283	44 250	133 400	136 936	269 493	5 543
Iowa	1	12	6	1 651	47 327	1 261	2 444	30 650	72 360	85 177	157 597	1 123
Kentucky	4	8	3	315	5 099	281	516	3 854	9 296	11 512	21 342	523
Maryland	4	5	3	335	8 059	269	503	6 009	15 421	18 863	34 315	264
Massachusetts	4	25	3	303	7 039	247	424	5 487	9 954	10 874	20 766	566
Minnesota	5	21	4	210	3 367	184	285	2 598	5 961	6 662	12 605	279
Mississippi	-	151	91	20 008	454 413	17 149	30 223	335 017	853 125	1 066 891	1 909 029	18 531
Missouri	-	20	4	2 101	52 395	1 903	3 881	45 832	125 569	89 048	213 726	2 915
Nebraska	1	6	1	146	2 873	128	222	2 310	5 125	6 475	11 600	162
New Jersey	2	28	6	458	12 263	382	771	9 619	24 810	21 688	46 446	537
New Mexico	3	8	1	124	2 046	92	170	1 326	2 884	2 417	5 214	43
New York	4	79	9	657	17 559	555	1 025	12 762	25 765	28 346	53 792	998
North Carolina	-	294	163	28 235	638 195	24 317	44 694	496 615	1 313 986	1 374 768	2 698 861	36 057
Oklahoma	1	10	2	264	5 755	240	417	5 177	11 557	13 025	24 534	270
Oregon	2	30	5	662	14 314	597	1 209	11 415	28 353	27 809	56 173	891
Pennsylvania	3	60	6	1 103	24 387	933	1 560	16 653	43 479	52 210	96 296	1 228
Tennessee	-	61	27	8 993	193 330	8 025	15 093	150 123	403 973	373 706	770 007	13 422
Texas	2	84	20	2 224	43 517	1 841	3 238	30 861	79 697	91 829	172 159	3 746
Utah	-	19	3	1 111	28 525	989	2 274	24 845	62 665	49 299	112 810	689
Virginia	1	29	12	1 735	38 320	1 539	3 240	29 770	84 690	85 677	170 611	2 295
Washington	2	18	1	110	2 503	98	177	1 928	4 474	5 465	9 920	236
Wisconsin	-	24	6	794	17 525	648	1 366	10 530	48 935	24 763	73 913	913

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337121, UPHOLSTERED HOUSEHOLD FURNITURE MFG		337121, UPHOLSTERED HOUSEHOLD FURNITURE MFG—Con.	
Companies ¹	number.. 1 565	Value added	\$1,000.. 4 082 196
All establishments	number.. 1 706	Total inventories, beginning of year	\$1,000.. 838 739
Establishments with 1 to 19 employees	number.. 1 172	Finished goods inventories, beginning of year	\$1,000.. 171 074
Establishments with 20 to 99 employees	number.. 319	Work-in-process inventories, beginning of year	\$1,000.. 159 839
Establishments with 100 employees or more	number.. 215	Materials and supplies inventories, beginning of year	\$1,000.. 507 826
All employees	number.. 90 008	Total inventories, end of year	\$1,000.. 846 155
Total compensation ²	\$1,000.. 2 407 321	Finished goods inventories, end of year	\$1,000.. 173 200
Annual payroll	\$1,000.. 2 022 565	Work-in-process inventories, end of year	\$1,000.. 162 983
Total fringe benefits	\$1,000.. 384 756	Materials and supplies inventories, end of year	\$1,000.. 509 972
Production workers, average for year	number.. 77 440	Gross book value of total assets at beginning of year	\$1,000.. 1 191 951
Production workers on March 12	number.. 77 357	Total capital expenditures (new and used)	\$1,000.. 107 015
Production workers on May 12	number.. 77 116	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 33 983
Production workers on August 12	number.. 76 963	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 73 032
Production workers on November 12	number.. 78 324	Total retirements ²	\$1,000.. 23 995
Production-worker hours	1,000.. 144 227	Gross book value of total assets at end of year	\$1,000.. 1 274 971
Production-worker wages	\$1,000.. 1 535 379	Total depreciation during year ²	\$1,000.. 70 978
Total cost of materials	\$1,000.. 4 321 726	Total rental payments ²	\$1,000.. 74 452
Cost of materials, parts, containers, etc., consumed	\$1,000.. 4 145 011	Buildings and other structures rental payments ²	\$1,000.. 45 699
Cost of resales	\$1,000.. 115 021	Machinery and equipment rental payments ²	\$1,000.. 28 753
Cost of fuels	\$1,000.. 10 266	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 9 337
Cost of purchased electricity	\$1,000.. 39 961	Response coverage ratio ⁴	percent.. 78
Cost of contract work	\$1,000.. 11 467	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 23 361
Quantity of electricity purchased for heat and power	1,000 kWh.. 658 496	Response coverage ratio ⁴	percent.. 78
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 9 438
Total value of shipments	\$1,000.. 8 398 652	Response coverage ratio ⁴	percent.. 78
Primary products value of shipments	\$1,000.. 8 046 317	Cost of purchased legal services ³	\$1,000.. 5 287
Secondary products value of shipments	\$1,000.. 172 527	Response coverage ratio ⁴	percent.. 78
Total miscellaneous receipts	\$1,000.. 179 808	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 3 924
Value of resales	\$1,000.. 156 727	Response coverage ratio ⁴	percent.. 78
Contract receipts	\$1,000.. 2 745	Cost of purchased advertising services ³	\$1,000.. 49 272
Other miscellaneous receipts	\$1,000.. 20 336	Response coverage ratio ⁴	percent.. 78
Primary products specialization ratio	percent.. 97	Cost of purchased software and other data processing services ³	\$1,000.. 6 162
Value of primary products shipments made in all industries	\$1,000.. 8 248 369	Response coverage ratio ⁴	percent.. 78
Value of primary products shipments made in this industry	\$1,000.. 8 046 317	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 3 934
Value of primary products shipments made in other industries	\$1,000.. 202 052	Response coverage ratio ⁴	percent.. 78
Coverage ratio	percent.. 97		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337121. UPHOLSTERED HOUSEHOLD FURNITURE MFG												
All establishments	1	1 706	534	90 008	2 022 565	77 440	144 227	1 535 379	4 082 196	4 321 726	8 398 652	107 015
Establishments with 1 to 4 employees	9	666	—	1 356	23 835	1 270	1 941	18 938	23 126	47 088	90 273	2 118
Establishments with 5 to 9 employees	9	288	—	1 905	32 895	1 612	2 572	26 187	58 777	64 681	123 450	2 547
Establishments with 10 to 19 employees	6	218	—	2 930	52 089	2 500	3 740	39 571	94 607	104 895	199 083	3 094
Establishments with 20 to 49 employees	3	197	197	6 295	123 778	5 320	8 986	92 874	233 595	276 301	508 721	8 699
Establishments with 50 to 99 employees	1	122	122	8 487	171 815	7 032	12 695	124 003	342 561	351 058	692 978	9 206
Establishments with 100 to 249 employees	1	126	126	19 648	430 432	16 519	30 879	321 202	862 031	1 002 325	1 868 851	20 674
Establishments with 250 to 499 employees	—	57	57	20 086	450 680	17 665	33 707	351 967	934 567	1 059 813	1 988 952	18 754
Establishments with 500 to 999 employees	—	24	24	15 514	390 409	13 480	26 454	300 413	802 701	777 711	1 565 071	18 288
Establishments with 1,000 to 2,499 employees	—	6	6	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	2	2	D	D	D	D	D	D	D	D	D
Administrative records ²	9	987	—	4 850	75 785	4 249	6 106	60 189	135 363	156 473	291 935	5 896

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337121	Upholstered household furniture mfg	1 706	90 008	2 022 565	77 440	144 227	1 535 379	4 082 196	4 321 726	8 398 652	107 015
3371211	Upholstered household furniture	535	79 072	1 835 346	68 003	129 282	1 387 471	3 767 798	3 879 460	7 623 514	92 253
3371214	Dual-purpose sleep furniture, including convertible sofas, futons shipped with frames, studio couches, etc.	23	1 530	30 369	1 205	2 231	21 321	58 207	91 993	150 123	3 573

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendices]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337121	Upholstered household furniture	N	X	X	8 248 369	N	X	X	N
3371211	Upholstered household furniture, except dual-purpose sleep furniture	N	X	X	7 117 711	N	X	X	N
33712111	Upholstered wood household sofas, davenports, settees, and loveseats, excluding chairs sold as part of suites and sectional sofa pieces, except dual-purpose sleep furniture	N	X	X	3 555 997	N	X	X	N
3371211111	Upholstered wood household sofas, davenports, settees, and loveseats, excluding chairs sold as part of suites and sectional sofa pieces, except dual-purpose sleep furniture	324	X	⁹ 10 609.5	3 555 997	309	X	⁹ 9 043.0	2 609 348
33712112	Upholstered wood household sectional sofa pieces, including pieces seating one person, except dual-purpose sleep furniture	N	X	X	551 081	N	X	X	N
3371211211	Upholstered wood household sectional sofa pieces, including pieces seating one person, except dual-purpose sleep furniture	120	X	^{P1} 623.4	551 081	122	X	^{P1} 364.2	399 880
33712113	Upholstered wood household rockers, including swivel rockers	N	X	X	253 984	N	X	X	N
3371211311	Upholstered wood household rockers, including swivel rockers	54	X	^{P1} 178.5	253 984	64	X	1 979.6	342 498
33712114	Upholstered wood household reclining chairs, all types	N	X	X	1 136 301	N	X	X	N
3371211411	Upholstered wood household reclining chairs, all types	70	X	4 661.1	1 136 301	72	X	^{P3} 835.1	772 366
33712115	Upholstered wood household swivel chairs with variable height adjustment and other upholstered wood household chairs and furniture, except dual-purpose sleep furniture	N	X	X	1 324 678	N	X	X	N
3371211511	Upholstered wood household swivel chairs with variable height adjustment	42	X	⁹ 420.9	114 413	36	X	S	49 674
3371211521	Other upholstered wood household chairs, except reclining and dual-purpose sleep furniture	204	X	^{P4} 872.8	932 769	206	X	⁹ 3 630.8	696 737
3371211531	Other upholstered wood household furniture (ottomans, hassocks, benches, etc.), except dual-purpose sleep furniture, and custom-made upholstered wood household furniture	173	X	X	277 496	N	X	X	N
3371211Y	Upholstered wood household furniture, except dual-purpose sleep furniture, nsk	N	X	X	295 670	N	X	X	N
3371211YWV	Upholstered household furniture manufacturing, except dual-purpose sleep furniture, nsk	N	X	X	295 670	N	X	X	N
3371214	Dual-purpose sleep furniture, including convertible sofas, jackknife sofa beds and chair beds, studio couches, and futons shipped with frames	N	X	X	511 779	N	X	X	508 751
33712141	Dual-purpose sleep furniture, including convertible sofas, jackknife sofa beds and chair beds, studio couches, and futons shipped with frames	N	X	X	511 779	N	X	X	N
3371214100	Dual-purpose sleep furniture, including convertible sofas, jackknife sofa beds and chair beds, studio couches, and futons shipped with frames	131	X	X	511 779	147	X	X	508 751
337121W	Upholstered household furniture, nsk, total	N	X	X	618 879	N	X	X	N
337121WY	Upholstered wood household furniture, nsk, total	N	X	X	618 879	N	X	X	N
337121WYWW	Upholstered household furniture manufacturing, nsk, for nonadministrative-record establishments	N	X	X	340 620	N	X	X	N
337121WYWY	Upholstered household furniture manufacturing, nsk for administrative-record establishments	N	X	X	278 259	N	X	X	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ⁹ 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371211	UPHOLSTERED HOUSEHOLD FURNITURE, EXCEPT DUAL-PURPOSE SLEEP FURNITURE		
	United States	7 117 711	N
	Alabama	22 015	N
	Arizona	16 535	N
	Arkansas	87 290	N
	California	659 320	N
	Florida	31 495	N
	Georgia	50 226	N
	Illinois	20 061	N
	Indiana	237 449	N
	Iowa	143 538	N
	Kansas	3 997	N
	Maryland	22 727	N
	Massachusetts	13 988	N
	Michigan	25 971	N
	Mississippi	1 696 364	N
	New Jersey	27 256	N
	New York	46 715	N
	North Carolina	2 381 668	N
	Oregon	38 239	N
Pennsylvania	69 907	N	
Tennessee	678 824	N	
Texas	123 382	N	
Virginia	153 403	N	
Wisconsin	57 506	N	
3371214	DUAL-PURPOSE SLEEP FURNITURE, INCLUDING CONVERTIBLE SOFAS, JACKKNIFE SOFA BEDS AND CHAIR BEDS, STUDIO COUCHES, AND FUTONS SHIPPED WITH FRAMES		
	United States	511 779	508 751
	California	51 360	77 366
	Mississippi	97 831	91 421
	New York	2 324	N
	North Carolina	169 367	128 557
	Pennsylvania	17 047	8 627
	Tennessee	37 973	44 374
	Texas	14 933	9 387
	Wisconsin	10 610	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337121	UPHOLSTERED HOUSEHOLD FURNITURE MFG				
32100025	Hardwood lumber, rough and dressed	X	150 294	X	N
32100031	Softwood lumber, rough and dressed	X	54 175	X	N
32191203	Hardwood cut stock and dimension, excluding furniture frames	X	96 311	X	N
33721500	Furniture frames, wood	X	382 126	X	N
31321007	Woven cotton upholstery fabrics, excluding ticking	X	360 746	X	N
31321011	Other woven upholstery fabrics (rayon, nylon, polyester, etc.), excluding ticking	X	505 254	X	N
31499901	Paddings, battings, and fillings, except rubber and plastics foam	X	207 131	X	N
31332007	Coated or laminated fabrics, including vinyl coated	X	372 987	X	N
33261200	Springs, innerspring units, and box spring constructions	X	110 617	X	N
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	146 790	X	N
33251007	Constructions (sleeper mechanisms) for dual purpose sleep furniture	X	73 168	X	N
32600001	Foam cores for mattresses, including latex, excluding topper pads	X	49 215	X	N
32615000	Formed and slab stock for pillows, cushions, seating, etc. (urethane)	X	444 730	X	N
00970099	All other materials and components, parts, containers, and supplies	X	571 498	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	632 754	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B. NAICS Codes, Titles, and Descriptions

337121 UPHOLSTERED HOUSEHOLD FURNITURE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing upholstered household-type furniture. The furniture may be made on a stock or custom basis.

The data published with NAICS code 337121 include the following SIC industries:

2512 Upholstered household furniture
2515 Mattresses and bedsprings (pt)
5712 Furniture stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337121 do not include establishments primarily engaged in manufacturing upholstered metal household furniture. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127W pt	39990 pt	39990 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	2599000 pt	2599000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	57120 pt	57120 pt	337122WYVW pt	2511000	2511000	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	2511002	2511002	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	5712000 pt	5712000 pt	337122WYVW pt	5712002 pt	5712000 pt	337127WYVW pt	3999002 pt	3999002 pt
337110WYVW pt	2434002	2434002	33712241	25145	25145	3371290	25170	25170
337110WYVW pt	2541002 pt	2541002 pt	3371224111	2514512	2514512	3371290111	2517015	2517015
337110WYVW pt	5712002 pt	5712000 pt	33712241121	2514513	2514513	3371290211	2517018	2517018
3371211	25120 pt	25120 pt	33712241131	2514515	2514515	3371290221	2517021	2517021
3371211 pt	57121 pt	57120 pt	33712241141	2514517	2514517	3371290YVW	2517000	2517000
3371211111	2512012	2512012	33712241151	2514521	2514521	3371290YVW	2517002	2517002
3371211121	2512041	2512041	33712241161	2514527	2514527	3372111	25212	25210 pt
3371211311	2512045	2512045	33712241171	2514597	2514597	3372111111	2521211	2521000 pt
3371211411	2512054	2512054	33712241YVW	2514500	2514500	3372111121	2521213	2521000 pt
3371211511	2512031	2512031	3371224	25146	25146	3372111131	2521214	2521000 pt
3371211521	2512035	2512035	33712244111	2514612	2514612	3372111141	2521217	2521000 pt
3371211531 pt	2512098	2512098	33712244221	2514622	2514622	3372111151	2521219	2521000 pt
3371211531 pt	5712121	5712000 pt	33712244231	2514624	2514624	3372111161	2521221	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	33712244241	2514698	2514698	3372111YVW	2521200	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	33712244YVW	2514600	2514600	3372114	25213	25210 pt
3371214	25155	25155	33712247	25147	25147	3372114111	2521311	2521000 pt
3371214100	2515500	2515500	3371224711	2514733	2514733	3372114121	2521313	2521000 pt
337121W pt	25150 pt	25150 pt	33712247121	2514737	2514737	3372114YVW	2521300	2521000 pt
337121W pt	25150 pt	25150 pt	3371224721	2514775	2514775	3372117	25214	25210 pt
337121W pt	57120 pt	57120 pt	33712247221	2514782	2514782	3372117111	2521411	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	33712247231	2514783	2514783	3372117211	2521413	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	33712247241	2514788	2514788	3372117311	2521415	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	33712247291 pt	2514789 pt	2514771	3372117321	2521417	2521000 pt
337121WYVW pt	2512002	2512002	33712247291 pt	2514789 pt	2514798	3372117331	2521419	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	33712247YVW	2514700	2514700	3372117341	2521425	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	3371224W	25140	25140	3372117351	2521427	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371224WYVW	2514000	2514000	3372117361	2521429	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371224WYVW	2514002	2514002	3372117YVW	2521400	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	337211A	25217	25210 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	337211A111	2521711	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	337211A121	2521713	2521000 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A131	2521715	2521000 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A141	2521719	2521000 pt
3371221231	2511271	2511271	3371250321	2519098	2519098	337211AYVW	2521700	2521000 pt
3371221241	2511281	2511281	3371250YVW	2519000	2519000	337211W	25210	25210 pt
3371221311	2511233	2511233	3371250YVW	2519002	2519002	337211WYVW	2521000	2521000 pt
3371221321	2511235	2511235	3371271	25311 pt	25311 pt	337211WYVW	2521002	2521002
3371221391	2511291	2511291	3371271111	2531131	2531131	3372120 pt	25410 pt	25410 pt
3371221395 pt	2511298	2511298	3371271121	2531136	2531136	3372120 pt	25417 pt	25411 pt
3371221395 pt	5712111	5712000 pt	3371271211	2531137	2531137	3372120 pt	25417 pt	25413 pt
3371221YVW pt	2511200	2511200	3371271221	2531192	2531198 pt	3372120100 pt	2541700 pt	2541111 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271YVW	2531100 pt	2531100 pt	3372120100 pt	2541700 pt	2541121 pt
3371224	25113	25113	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541131 pt
3371224111	2511311	2511311	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541200 pt
3371224211	2511331	2511331	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541332
3371224311	2511351	2511351	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541333
3371224321	2511371	2511371	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541334
3371224391	2511391	2511391	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541338 pt
3371224395	2511399	2511399	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541339 pt
3371224YVW	2511300	2511300	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541341 pt
3371227	25115	25115	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541361 pt
3371227111	2511511	2511511	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227121	2511513	2511513	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227131	2511515	2511515	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227141	2511517	2511517	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227211	2511521	2511521	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
3371227311	2511535	2511535	3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWW pt	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWW pt	2541000 pt	2541000 pt
337214121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWW pt	2542000	2542000
3372141211	2522114	2522100 pt	3372157	25421	25421	337215WYWW pt	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157111	2542113	2542113	337215WYWW pt	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157121	2542117	2542117	337215WYWW pt	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157131	2542119	2542119	337215WYWW pt	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157YVW	2542100	2542100	337215WYWW pt	3499002 pt	3499002 pt
3372144	25225	25225	337215A	25422	25422	3379101	25151	25151
3372144111	2522511	2522500 pt	337215A111	2542233	2542233	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
3372147311	2522619	2522600 pt	337215E111	2542341	2542341	3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E121	2542343	2542343	3379107	25153	25153
3372147421	2522613	2522600 pt	337215E131	2542345	2542345	3379107111	2515315	2515315
3372147431	2522625	2522600 pt	337215E141	2542347	2542347	3379107121	2515317	2515317
3372147441	2522627	2522600 pt	337215E151	2542349	2542349	3379107131	2515319	2515319
3372147451	2522629	2522600 pt	337215EYVW	2542300	2542300	3379107YVW	2515300	2515300
3372147YVW	2522600	2522600 pt	337215H pt	25424	25424	337910A	25156	25156
337214A	25227	25227	337215H111 pt	34998 pt	34998 pt	337910A111	2515613	2515613
337214A111	2522711	2522700 pt	337215H111 pt	2542461 pt	2542463	337910A121	2515619	2515619
337214A211	2522713	2522700 pt	337215H211 pt	2542461 pt	2542467 pt	337910AYVW	2515600	2515600
337214A221	2522715	2522700 pt	337215H211 pt	2542464 pt	2542465	337910W	25150 pt	25150 pt
337214A231	2522719	2522700 pt	337215H311	2542469	2542469	337910WYWW	2515000 pt	2515000 pt
337214AYVW	2522700	2522700 pt	337215H321	2542471	2542471	337910WYVW	2515002 pt	2515002 pt
337214W	25220	25220	337215H331	2542499	2542499	3379201	25913	25913
337214WYWW	2522000	2522000	337215H341	3499896	3499899 pt	3379201111	2591311	2591311
337214WYVW	2522002	2522002	337215H351	3499897	3499899 pt	3379201121	2591313	2591313
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201131	2591315	2591315
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201YVW	2591300	2591300
3372151121	2541415	2541121 pt	337215K	24266	24266	3379204	25914	25914
3372151131	2541419	2541131 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
3372151YVW	2541400	2541100 pt	337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335	337215W pt	24260 pt	24260 pt	3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
3372154121 pt	2541613 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207YVW	2591500	2591500
3372154131 pt	2541615 pt	2541338 pt	337215W pt	25410 pt	25410 pt	337920W	25910	25910
3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYWW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Nonupholstered Wood Household Furniture Manufacturing

1997

Issued October 1999

EC97M-3371C

1997 Economic Census

Manufacturing

Industry Series



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Economics and Statistics Administration
U.S. CENSUS BUREAU



ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Nonupholstered Wood Household Furniture Manufacturing

1997

Issued October 1999

EC97M-3371C

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337122	Nonupholstered wood household furniture mfg	3 678	3 849	127 665	2 677 569	110 577	213 380	2 031 748	5 874 671	5 377 590	11 252 749	297 511
251100	Wood household furniture	N	3 034	122 786	2 582 089	106 456	206 128	1 959 274	5 706 397	5 222 443	10 929 348	289 929
571215	Furniture stores (pt)	N	815	4 879	95 480	4 121	7 252	72 474	168 274	155 147	323 401	7 582

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337122, NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MFG												
United States	1	3 849	743	127 665	2 677 569	110 577	213 380	2 031 748	5 874 671	5 377 590	11 252 749	297 511
Alabama	-	82	26	3 573	59 608	3 133	6 112	45 067	124 540	140 961	274 427	5 857
Arizona	1	87	14	2 835	50 725	2 499	5 011	42 700	100 803	99 530	198 021	6 659
Arkansas	-	32	10	2 610	46 227	2 278	3 631	35 209	73 690	107 365	180 914	3 313
California	2	511	133	13 716	250 728	11 897	21 303	183 761	499 037	549 379	1 057 302	25 492
Colorado	-	67	6	1 156	21 601	1 083	2 203	19 058	34 254	47 098	78 728	1 776
Connecticut	4	44	3	268	7 308	232	444	5 401	13 038	13 317	26 189	552
Florida	3	265	16	2 345	44 242	2 082	3 522	34 560	97 562	75 092	174 182	3 897
Georgia	1	97	17	1 892	34 977	1 656	3 080	26 348	89 760	106 614	196 087	3 598
Idaho	5	37	4	266	4 548	244	389	3 762	8 822	7 255	16 185	413
Illinois	3	127	23	1 853	40 963	1 487	2 673	29 016	82 026	108 681	190 139	3 075
Indiana	1	81	28	3 510	84 585	3 063	6 336	63 737	185 789	145 415	326 725	5 763
Iowa	4	30	4	261	3 554	217	346	2 726	5 486	5 668	11 102	225
Kentucky	-	42	8	921	18 885	792	1 661	14 874	38 697	33 193	70 532	1 445
Louisiana	5	25	2	150	2 229	135	217	1 709	3 966	3 625	7 590	261
Maryland	2	54	5	462	11 840	372	688	8 250	18 785	12 721	31 350	1 176
Massachusetts	1	84	16	1 384	34 466	1 083	2 091	23 691	69 255	67 650	136 538	2 298
Michigan	1	101	23	2 184	54 273	1 770	3 355	38 664	118 345	113 378	231 346	5 369
Mississippi	3	41	13	2 728	41 725	2 181	4 281	29 015	131 078	143 223	274 028	6 658
Missouri	2	64	9	2 260	60 099	1 900	3 886	48 200	172 720	190 410	365 179	6 466
New Jersey	4	92	11	775	18 842	658	1 130	14 300	34 276	35 695	70 001	1 876
New Mexico	5	42	-	231	3 964	199	341	2 968	6 705	6 089	12 766	357
New York	1	245	39	6 406	161 333	5 210	9 582	106 892	397 014	269 865	659 909	43 075
North Carolina	-	237	102	31 997	687 307	28 283	56 178	567 238	1 547 045	1 160 653	2 725 312	51 487
North Dakota	1	6	1	233	4 820	219	440	4 216	8 874	8 247	17 554	615
Ohio	-	141	13	4 020	117 587	3 344	6 627	60 017	360 562	344 275	702 805	26 669
Oklahoma	3	27	5	234	4 366	202	360	3 405	8 102	5 654	13 738	344
Oregon	1	72	14	1 311	27 388	1 097	2 242	19 517	57 118	63 733	120 485	3 108
Pennsylvania	3	158	25	2 914	63 070	2 486	4 646	46 667	129 478	105 338	233 784	6 136
Rhode Island	2	11	2	127	2 642	107	229	1 809	4 406	3 107	7 518	242
South Carolina	-	35	8	2 049	35 514	1 898	3 216	30 280	82 626	81 680	167 075	3 199
Tennessee	1	98	33	5 159	100 078	4 484	8 471	79 164	182 879	190 842	374 534	7 236
Texas	3	172	13	1 741	30 817	1 473	2 444	22 093	64 322	43 168	107 134	2 313
Utah	4	48	4	566	11 500	496	948	8 787	23 053	26 742	48 510	907
Virginia	-	107	37	14 668	289 978	13 295	26 819	238 750	640 746	537 193	1 172 448	37 949
Washington	3	72	8	587	11 406	526	876	8 793	21 552	21 422	42 932	1 414
West Virginia	1	16	3	318	5 743	266	460	4 179	11 746	12 144	23 929	771
Wisconsin	-	109	25	5 106	125 184	4 126	9 292	74 456	254 379	342 385	583 070	8 836

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337122, NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MFG		337122, NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MFG—Con.	
Companies ¹	number.. 3 678	Value added	\$1,000.. 5 874 671
All establishments	number.. 3 849	Total inventories, beginning of year	\$1,000.. 2 123 203
Establishments with 1 to 19 employees	number.. 3 106	Finished goods inventories, beginning of year	\$1,000.. 1 041 535
Establishments with 20 to 99 employees	number.. 486	Work-in-process inventories, beginning of year	\$1,000.. 408 962
Establishments with 100 employees or more	number.. 257	Materials and supplies inventories, beginning of year	\$1,000.. 672 706
All employees	number.. 127 665	Total inventories, end of year	\$1,000.. 2 149 734
Total compensation ²	\$1,000.. 3 257 948	Finished goods inventories, end of year	\$1,000.. 1 027 458
Annual payroll	\$1,000.. 2 677 569	Work-in-process inventories, end of year	\$1,000.. 422 551
Total fringe benefits	\$1,000.. 580 379	Materials and supplies inventories, end of year	\$1,000.. 699 725
Production workers, average for year	number.. 110 577	Gross book value of total assets at beginning of year	\$1,000.. 3 537 846
Production workers on March 12	number.. 111 451	Total capital expenditures (new and used)	\$1,000.. 297 511
Production workers on May 12	number.. 110 572	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 69 717
Production workers on August 12	number.. 109 769	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 227 794
Production workers on November 12	number.. 110 516	Total retirements ²	\$1,000.. 53 044
Production-worker hours	1,000.. 213 380	Gross book value of total assets at end of year	\$1,000.. 3 782 313
Production-worker wages	\$1,000.. 2 031 748	Total depreciation during year ²	\$1,000.. 263 347
Total cost of materials	\$1,000.. 5 377 590	Total rental payments ²	\$1,000.. 99 827
Cost of materials, parts, containers, etc., consumed	\$1,000.. 4 634 910	Buildings and other structures rental payments ²	\$1,000.. 58 519
Cost of resales	\$1,000.. 529 214	Machinery and equipment rental payments ²	\$1,000.. 41 308
Cost of fuels	\$1,000.. 27 653	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 18 957
Cost of purchased electricity	\$1,000.. 139 007	Response coverage ratio ⁴	percent.. 79
Cost of contract work	\$1,000.. 46 806	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 70 971
Quantity of electricity purchased for heat and power	1,000 kWh.. 2 514 468	Response coverage ratio ⁴	percent.. 79
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 15 134
Total value of shipments	\$1,000.. 11 252 749	Response coverage ratio ⁴	percent.. 79
Primary products value of shipments	\$1,000.. 9 834 182	Cost of purchased legal services ³	\$1,000.. 8 987
Secondary products value of shipments	\$1,000.. 666 223	Response coverage ratio ⁴	percent.. 79
Total miscellaneous receipts	\$1,000.. 752 344	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 7 871
Value of resales	\$1,000.. 674 795	Response coverage ratio ⁴	percent.. 79
Contract receipts	\$1,000.. 20 459	Cost of purchased advertising services ³	\$1,000.. 58 195
Other miscellaneous receipts	\$1,000.. 57 090	Response coverage ratio ⁴	percent.. 79
Primary products specialization ratio	percent.. 93	Cost of purchased software and other data processing services ³	\$1,000.. 29 386
Value of primary products shipments made in all industries	\$1,000.. 10 246 583	Response coverage ratio ⁴	percent.. 79
Value of primary products shipments made in this industry	\$1,000.. 9 834 182	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 14 682
Value of primary products shipments made in other industries	\$1,000.. 412 401	Response coverage ratio ⁴	percent.. 79
Coverage ratio	percent.. 95		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337122. NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MFG												
All establishments	1	3 849	743	127 665	2 677 569	110 577	213 380	2 031 748	5 874 671	5 377 590	11 252 749	297 511
Establishments with 1 to 4 employees	8	2 007	—	3 724	67 811	3 566	5 496	54 366	116 445	113 641	230 337	7 668
Establishments with 5 to 9 employees	7	639	—	4 199	75 441	3 518	5 814	58 840	140 827	135 672	277 682	7 096
Establishments with 10 to 19 employees	3	460	—	6 215	118 986	5 187	8 894	88 894	219 617	211 295	430 245	11 310
Establishments with 20 to 49 employees	2	321	321	10 004	196 384	8 362	15 480	147 109	380 389	350 289	725 083	20 702
Establishments with 50 to 99 employees	2	165	165	11 678	232 236	9 938	18 840	169 123	483 104	468 376	953 747	21 812
Establishments with 100 to 249 employees	1	129	129	20 429	412 991	17 505	34 084	313 373	871 921	905 700	1 800 990	58 614
Establishments with 250 to 499 employees	—	80	80	29 086	592 062	26 235	52 386	487 415	1 486 754	1 175 605	2 651 864	49 473
Establishments with 500 to 999 employees	—	36	36	23 785	504 804	21 017	41 447	402 854	1 002 527	896 911	1 894 081	43 325
Establishments with 1,000 to 2,499 employees	—	11	11	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	1	1	D	D	D	D	D	D	D	D	D
Administrative records ²	9	2 050	—	6 746	106 325	6 044	9 019	85 212	187 154	183 113	370 522	11 149

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337122	Nonupholstered wood household furniture mfg.	3 849	127 665	2 677 569	110 577	213 380	2 031 748	5 874 671	5 377 590	11 252 749	297 511
3371221	Wood living room, library, family room, and den furniture, nonupholstered	449	24 537	504 364	21 152	41 003	384 719	1 082 070	999 130	2 076 530	58 268
3371224	Wood dining room and kitchen furniture, except kitchen cabinets	166	21 869	498 128	18 430	35 703	357 432	1 060 424	895 550	1 945 336	39 916
3371227	Wood bedroom furniture	261	49 054	990 003	43 433	86 893	801 076	2 050 406	1 942 944	4 023 835	84 814
337122A	Infants' and children's wood furniture	28	3 574	71 320	3 069	6 585	52 707	191 358	153 532	338 939	6 205
337122E	Wood outdoor furniture, unpainted wood furniture, and ready-to-assemble wood furniture	79	10 460	280 333	8 536	16 520	173 191	896 706	821 336	1 712 525	75 151

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337122	Nonupholstered wood household furniture	N	X	X	10 246 583	N	X	X	N
3371221	Wood living room, library, family room, and den furniture, nonupholstered	N	X	X	2 262 477	N	X	X	N
33712211	Wood living room, library, family room, and den tables (all types), except card and telephone tables	N	X	X	594 212	N	X	X	N
337122111	Wood living room, library, family room, and den tables (all types), except card and telephone tables, 1,000 units	154	X	P4 271.3	594 212	182	X	Q3 751.9	493 672
33712212	Wood living room, library, family room, and den cabinets, desks, credenzas, bookcases, bookshelves, and wall units	N	X	X	875 504	N	X	X	N
337122121	Wood living room, library, family room, and den cabinets, including record, music, sewing, smoking, etc., except sewing machine, radio, phono, and television cabinets	60	X	X	203 590	103	X	X	182 078
3371221221	Wood household desks, 1,000 units	93	X	Q631.7	180 136	76	X	Q528.1	132 756
3371221231	Wood living room, library, family room, and den credenzas, bookcases, and bookshelves, except wall units	85	X	X	99 870	76	X	X	89 152
3371221241	Wood living room, library, family room, and den wall units (desk, bookcase, and storage type), 1,000 units	129	X	P1 231.9	391 908	146	X	Q1 154.9	280 741
33712213	Wood living room, library, family room, and den chairs, except dining room	N	X	X	738 533	N	X	X	N
3371221311	Wood living room, library, family room, and den chairs and seating, except dining room, 1,000 units	60	X	P1 790.4	122 204	60	X	S	67 455
3371221321	Wood living room, library, family room, and den rockers, 1,000 units	32	X	P617.7	64 163	38	X	Q784.5	70 338
3371221391	Other nonupholstered wood living room, library, family room, and den seating, including settees, love seats, benches, stools, etc.	46	X	X	63 005	57	X	X	51 284
3371221395	Custom-made wood household furniture, except cabinets, nonupholstered	221	X	X	489 161	N	X	X	N
3371221Y	Wood living room, library, family room, and den furniture, nsk	N	X	X	54 228	N	X	X	N
3371221YWV	Other nonupholstered wood living room furniture, nsk	N	X	X	54 228	N	X	X	N
3371224	Wood dining room and kitchen furniture, except kitchen cabinets	N	X	X	1 568 290	N	X	X	1 603 463
33712241	Wood dining room tables, 30 x 40 in. or greater	N	X	X	463 340	N	X	X	N
3371224111	Wood dining room tables, 30 x 40 in. or greater, 1,000 units	157	X	Q1 323.4	463 340	148	X	Q1 621.0	379 651
33712242	Wood dining room chairs	N	X	X	545 377	N	X	X	N
3371224211	Wood dining room chairs, 1,000 units	150	X	Q4 869.9	545 377	167	X	Q7 968.8	581 365
33712243	Wood dining room buffets, servers, china and corner cabinets, and other nonupholstered kitchen and dining room seating	N	X	X	466 337	N	X	X	N
3371224311	Wood dining room buffets and servers, 1,000 units	80	X	P470.3	197 402	70	X	Q359.6	142 901
3371224321	Wood dining room china and corner cabinets, 1,000 units	92	X	P447.1	206 195	74	X	S	309 415
3371224391	Other nonupholstered wood dining room and kitchen seating	24	X	X	20 050	24	X	X	19 770
3371224395	Other nonupholstered wood dining room and kitchen furniture, including junior dining furniture sets	21	X	X	42 690	26	X	X	83 832
3371224Y	Wood dining room and kitchen furniture, except kitchen cabinets, nsk	N	X	X	93 236	N	X	X	N
3371224YWV	Wood dining room and kitchen furniture, except kitchen cabinets, nsk	N	X	X	93 236	N	X	X	86 529
3371227	Wood bedroom furniture	N	X	X	3 328 691	N	X	X	2 489 221
33712271	Wood bedroom furniture, including beds, headboards, bunk beds, cribs, cradles, etc.	N	X	X	955 290	N	X	X	N
3371227111	Wood beds, excluding headboards, headboard beds, bunk beds, cribs, cradles, hollywood beds, and youth beds, 1,000 units	120	X	Q1 075.5	355 972	90	X	S	217 666
3371227121	Wood headboards and headboard beds, including padded, 1,000 units	122	X	P3 971.7	504 468	91	X	P2 461.9	299 161
3371227131	Wood bunk beds, excluding mattresses and detachable springs, 1,000 units	33	X	P357.6	56 710	36	X	P529.5	50 604
3371227141	Wood conventional water beds, 1,000 units	16	X	S	38 140	31	X	S	97 351
33712272	Wood bedroom dressers, vanities, and dressing tables	N	X	X	680 518	N	X	X	N
3371227211	Wood bedroom dressers, vanities, and dressing tables, 1,000 units	159	X	P3 159.2	680 518	127	X	P2 272.0	487 217
33712273	Wood bedroom chests of drawers	N	X	X	597 148	N	X	X	N
3371227311	Wood bedroom chests of drawers, 1,000 units	165	X	P3 250.4	597 148	132	X	2 376.5	391 076

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337122	Nonupholstered wood household furniture—Con.								
3371227	Wood bedroom furniture—Con.								
33712274	Wood bedroom wardrobes, chifforobes, armoires, wardrobe-type cabinets, cedar chests, and night tables and stands								
3371227411	Wood bedroom wardrobes, chifforobes, armoires, and wardrobe-type cabinets	N	X	X	960 707	N	X	X	N
3371227421	Wood bedroom cedar chests	108	X	P801.8	256 466	75	X	398.4	137 251
3371227431	Wood bedroom night tables and stands	14	X	341.8	50 626	11	X	188.0	29 190
3371227491	Other nonupholstered wood bedroom furniture, including commodes, bed rails, chairs, valet stands, etc.	124	X	92 763.0	370 478	105	X	P2 174.2	250 180
3371227Y	Wood bedroom furniture, nsk	N	X	X	135 028	N	X	X	N
3371227YVW	Wood bedroom furniture, nsk	N	X	X	135 028	N	X	X	242 600
337122A	Infants' and children's wood furniture	N	X	X	313 892	N	X	X	316 182
337122A1	Infants' and children's wood furniture	N	X	X	310 748	N	X	X	N
337122A111	Infants' and children's wood cribs, including springs sold as part of the crib	13	X	S	111 976	17	X	S	111 780
337122A121	Infants' and children's wood seating (chairs, nursery seats, high chairs, etc.)	8	X	X	12 557	10	X	X	11 709
337122A131	Other infants' and children's wood bedroom furniture, including youth beds	23	X	X	152 490	32	X	X	123 864
337122A141	Other infants' and children's nonupholstered wood furniture	24	X	X	33 725	17	X	X	59 253
337122AY	Infants' and children's wood furniture, nsk	N	X	X	3 144	N	X	X	N
337122AYVW	Infants' and children's wood furniture, nsk	N	X	X	3 144	N	X	X	9 576
337122E	Wood outdoor furniture, unpainted wood furniture, and ready-to-assemble wood furniture	N	X	X	1 670 372	N	X	X	1 089 750
337122E1	Wood outdoor furniture, unpainted wood furniture, and ready-to-assemble wood furniture	N	X	X	1 654 207	N	X	X	N
337122E111	Porch, lawn, beach, and similar wood outdoor furniture	38	X	X	59 625	44	X	X	57 053
337122E121	Unpainted wood furniture, assembled (furniture-in-the-white), including bookcases, chairs, tables, desks, vanities, etc.	19	X	X	77 253	30	X	X	74 786
337122E131	Ready-to-assemble wood household seating, unpainted or finished, sold in kits	8	X	S	43 969	6	X	9769.4	22 313
337122E141	Ready-to-assemble wood kitchen furniture, unpainted or finished, sold in kits	11	X	X	141 548	11	X	X	124 490
337122E151	Ready-to-assemble wood bedroom furniture, unpainted or finished, sold in kits	12	X	X	82 836	19	X	X	64 806
337122E161	Ready-to-assemble wood home entertainment centers, unpainted or finished, sold in kits	18	X	S	469 380	17	X	92 161.0	106 487
337122E171	Ready-to-assemble wood shelving, unpainted or finished, sold in kits	9	X	X	57 024	N	X	X	N
337122E181	Ready-to-assemble wood home-office computer furniture, unpainted or finished, sold in kits	14	X	X	578 672	N	X	X	N
337122E191	Other ready-to-assemble wood furniture, unpainted or finished, sold in kits	19	X	X	143 900	N	X	X	N
337122EY	Wood outdoor furniture, unpainted wood furniture, and ready-to-assemble wood furniture, nsk	N	X	X	16 165	N	X	X	N
337122EYVW	Wood outdoor furniture, unpainted wood furniture, and ready-to-assemble wood furniture, nsk	N	X	X	16 165	N	X	X	35 356
337122W	Nonupholstered wood household furniture, nsk, total	N	X	X	1 102 861	N	X	X	N
337122WY	Wood household furniture manufacturing, nsk, total	N	X	X	1 102 861	N	X	X	N
337122WYVW	Nonupholstered wood household furniture manufacturing, nsk, for nonadministrative-record establishments	N	X	X	746 903	N	X	X	N
337122WYVY	Nonupholstered wood household furniture manufacturing, nsk, for administrative-record establishments	N	X	X	355 958	N	X	X	N

See footnotes at end of table.

Table 6a. **Products Statistics: 1997 and 1992—Con.**

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371221	WOOD LIVING ROOM, LIBRARY, FAMILY ROOM, AND DEN FURNITURE, NONUPHOLSTERED		
	United States	2 262 477	N
	Alabama	34 025	N
	Arizona	48 643	N
	California	282 077	N
	Colorado	13 335	N
	Connecticut	5 065	N
	Florida	12 297	N
	Georgia	36 351	N
	Idaho	3 009	N
	Illinois	18 774	N
	Indiana	94 845	N
	Kansas	2 816	N
	Kentucky	45 779	N
	Maine	9 190	N
	Maryland	5 342	N
	Massachusetts	21 962	N
	Michigan	35 071	N
	Minnesota	3 322	N
	Mississippi	122 544	N
	Missouri	11 462	N
	New Hampshire	17 733	N
	New Jersey	13 941	N
	New Mexico	2 560	N
	New York	71 132	N
	North Carolina	527 461	N
	Oklahoma	4 137	N
	Oregon	8 992	N
	Pennsylvania	56 540	N
	South Carolina	4 856	N
	Tennessee	89 667	N
	Texas	32 591	N
	Vermont	23 425	N
Virginia	227 794	N	
Washington	5 262	N	
Wisconsin	117 514	N	
3371224	WOOD DINING ROOM AND KITCHEN FURNITURE, EXCEPT KITCHEN CABINETS		
	United States	1 568 290	1 603 463
	Alabama	34 355	73 516
	Arizona	2 252	N
	Arkansas	9 568	11 316
	California	162 073	118 293
	Colorado	6 894	N
	Florida	3 152	N
	Georgia	51 888	50 639
	Illinois	85 755	57 318
	Indiana	35 274	72 347
	Kansas	7 428	N
	Kentucky	3 332	N
	Maine	4 080	N
	Massachusetts	55 943	42 254
	Michigan	28 279	25 131
	Missouri	3 135	N
	New Jersey	9 112	N
	New York	69 395	50 889
	North Carolina	614 297	574 613
	Ohio	26 113	14 359
	Pennsylvania	45 942	53 204
	Tennessee	18 050	29 122
	Texas	2 342	11 258
	Vermont	24 922	N
	Virginia	145 334	227 433
	Washington	4 546	N

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371227	WOOD BEDROOM FURNITURE		
	United States	3 328 691	2 489 221
	Alabama	133 305	102 287
	Arizona	114 583	54 596
	Arkansas	42 256	23 729
	California	292 441	217 184
	Connecticut	3 423	8 867
	Florida	81 830	82 270
	Illinois	4 523	7 371
	Indiana	100 842	61 078
	Kentucky	8 590	17 757
	Maine	11 612	N
	Massachusetts	14 797	11 893
	Michigan	29 550	27 994
	Mississippi	73 930	60 140
	Missouri	15 212	13 081
	New Jersey	2 567	8 784
	New York	49 403	47 805
	North Carolina	1 135 913	782 908
	Ohio	6 339	15 598
	Oklahoma	3 472	N
	Oregon	17 969	10 496
	Pennsylvania	49 012	57 574
	South Carolina	128 082	95 218
	Tennessee	196 462	188 540
	Texas	9 737	10 913
	Vermont	60 833	36 037
	Virginia	451 604	364 184
	Washington	17 071	8 708
	Wisconsin	149 288	N
337122A	INFANTS' AND CHILDREN'S WOOD FURNITURE		
	United States	313 892	316 182
	California	4 427	5 159
	Pennsylvania	3 893	3 792
	Virginia	29 756	N
	Wisconsin	60 693	88 146
337122E	WOOD OUTDOOR FURNITURE, UNPAINTED WOOD FURNITURE, AND READY-TO-ASSEMBLE WOOD FURNITURE		
	United States	1 670 372	1 089 750
	Alabama	8 039	4 696
	California	62 802	34 133
	Maine	9 349	4 830
	Massachusetts	4 603	6 923
	North Carolina	5 193	7 231
	Ohio	546 509	N
	Pennsylvania	16 650	15 583
	Virginia	169 423	96 019

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337122	NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MFG				
32100025	Hardwood lumber, rough and dressed	X	696 381	X	N
32100031	Softwood lumber, rough and dressed	X	179 397	X	N
32191203	Hardwood cut stock and dimension, excluding furniture frames	X	287 869	X	N
32121201	Softwood plywood	X	38 876	X	N
32121101	Hardwood plywood	X	133 728	X	N
32121105	Hardwood veneer	X	143 456	X	N
32121903	Particleboard (wood)	X	341 775	X	N
32121907	Medium density fiberboard (MDF)	X	136 458	X	N
32121909	Hardboard	X	37 568	X	N
33721500	Furniture frames, wood	X	239 502	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	150 015	X	N
32552001	Adhesives and sealants	X	31 201	X	N
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	12 253	X	N
32610017	Plastics parts, components, sheets, and other shapes (excluding plastics resins)	X	44 735	X	N
32721101	Flat glass (plate, float, and sheet)	X	61 568	X	N

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337122	NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MFG —Con.				
32721503	Mirrors, framed and unframed	X	58 076	X	N
31320027	Fabrics, all types,	X	80 043	X	N
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	333 550	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	245 305	X	N
00970099	All other materials and components, parts, containers, and supplies	X	639 744	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	743 410	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B. NAICS Codes, Titles, and Descriptions

337122 NONUPHOLSTERED WOOD HOUSEHOLD FURNITURE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing nonupholstered wood household-type furniture and freestanding cabinets (except television, radio, and sewing machine cabinets). The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337122 include the following SIC industries:

2511 Wood household furniture
5712 Furniture stores (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337122 include establishments primarily engaged in manufacturing wood box spring frames. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127W pt	39990 pt	39990 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	2599000 pt	2599000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	5712002 pt	5712002 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	2541000 pt	2541000 pt	33712241	25145	25145	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	5712000 pt	5712000 pt	3371241111	2514512	2514512	337127WYVW pt	3999002 pt	3999002 pt
337110WYVW pt	2434002	2434002	3371241121	2514513	2514513	3371290	25170	25170
337110WYVW pt	2541002 pt	2541002 pt	3371241131	2514515	2514515	3371290111	2517015	2517015
337110WYVW pt	5712002 pt	5712000 pt	3371241141	2514517	2514517	3371290211	2517018	2517018
3371211	25120 pt	25120 pt	3371241151	2514521	2514521	3371290221	2517021	2517021
3371211 pt	57121 pt	57120 pt	3371241161	2514527	2514527	3371290YVW	2517000	2517000
3371211111	2512012	2512012	3371241171	2514597	2514597	3371290YVW	2517002	2517002
3371211121	2512041	2512041	3371241YVW	2514500	2514500	3372111	25212	25210 pt
3371211311	2512045	2512045	3371244	25146	25146	3372111111	2521211	2521000 pt
3371211411	2512054	2512054	3371244111	2514612	2514612	3372111121	2521213	2521000 pt
3371211511	2512031	2512031	3371244211	2514622	2514622	3372111131	2521214	2521000 pt
3371211521	2512035	2512035	3371244231	2514624	2514624	3372111141	2521217	2521000 pt
3371211531 pt	2512098	2512098	3371244241	2514698	2514698	3372111151	2521219	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244YVW	2514600	2514600	3372111161	2521221	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371247	25147	25147	3372111YVW	2521200	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371247111	2514733	2514733	3372114	25213	25210 pt
3371214	25155	25155	3371247121	2514737	2514737	3372114111	2521311	2521000 pt
3371214100	2515500	2515500	3371247211	2514775	2514775	3372114121	2521313	2521000 pt
337121W pt	25120 pt	25120 pt	3371247221	2514782	2514782	3372114YVW	2521300	2521000 pt
337121W pt	25150 pt	25150 pt	3371247231	2514783	2514783	3372117	25214	25210 pt
337121W pt	57120 pt	57120 pt	3371247241	2514788	2514788	3372117111	2521411	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247291 pt	2514789 pt	2514771	3372117211	2521413	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247291 pt	2514789 pt	2514798	3372117311	2521415	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247YVW	2514700	2514700	3372117321	2521417	2521000 pt
337121WYVW pt	2512002	2512002	337124W	25140	25140	3372117331	2521419	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	337124WYVW	2514000	2514000	3372117341	2521425	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	337124WYVW	2514002	2514002	3372117351	2521427	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	3372117361	2521429	2521000 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	3372117YVW	2521400	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	337211A	25217	25210 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A111	2521711	2521000 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A121	2521713	2521000 pt
3371221231	2511271	2511271	3371250321	2519098	2519025	337211A131	2521715	2521000 pt
3371221241	2511281	2511281	3371250YVW	2519000	2519000	337211A141	2521719	2521000 pt
3371221311	2511233	2511233	3371250YVW	2519002	2519002	337211AYVW	2521700	2521000 pt
3371221321	2511235	2511235	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221391	2511291	2511291	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	2511298	2511298	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221395 pt	5712111	5712000 pt	3371271211	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	2511200	2511200	3371271221	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224	25113	25113	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224111	2511311	2511311	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224211	2511331	2511331	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224311	2511351	2511351	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224321	2511371	2511371	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371224391	2511391	2511391	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
3371224395	2511399	2511399	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371224YVW	2511300	2511300	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
3371227	25115	25115	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541339 pt
3371227111	2511511	2511511	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227121	2511513	2511513	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227131	2511515	2511515	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227141	2511517	2511517	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227211	2511521	2511521	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
3371227311	2511535	2511535	3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWW pt	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWW pt	2541000 pt	2541000 pt
337214121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWW pt	2542000	2542000
3372141211	2522114	2522100 pt				337215WYWW pt	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157	25421	25421	337215WYWW pt	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157111	2542113	2542113	337215WYWW pt	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157121	2542117	2542117	337215WYWW pt	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157131	2542119	2542119	337215WYWW pt	3499002 pt	3499002 pt
			3372157YVW	2542100	2542100			
3372144	25225	25225				3379101	25151	25151
3372144111	2522511	2522500 pt	337215A	25422	25422	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A111	2542233	2542233			
3372144YVW	2522500	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
			337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
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3372147311	2522619	2522600 pt				3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E	25423	25423			
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3372147431	2522625	2522600 pt	337215E121	2542343	2542343	3379107111	2515315	2515315
3372147441	2522627	2522600 pt	337215E131	2542345	2542345	3379107121	2515317	2515317
3372147451	2522629	2522600 pt	337215E141	2542347	2542347	3379107131	2515319	2515319
3372147YVW	2522600	2522600 pt	337215E151	2542349	2542349	3379107YVW	2515300	2515300
			337215EYVW	2542300	2542300			
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337214A211	2522713	2522700 pt	337215H pt	34998 pt	34998 pt	337910A121	2515619	2515619
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337214WYWW	2522000	2522000	337215H331	2542499	2542499			
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			337215H351	3499897	3499899 pt	3379201111	2591311	2591311
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201121	2591313	2591313
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201131	2591315	2591315
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			337215K121	2426613	2426613	3379204111	2591452	2591452
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204211	2591458	2591458
3372154111 pt	2541611 pt	2541335				3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541338 pt				3379204YVW	2591400	2591400
3372154121 pt	2541613 pt	2541336	337215W pt	24260 pt	24260 pt			
3372154121 pt	2541613 pt	2541338 pt				3379207	25915	25915
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207111	2591511	2591511
3372154131 pt	2541615 pt	2541338 pt				3379207121	2591517	2591517
3372154141	2541621	2541339 pt	337215W pt	25420	25420	3379207YVW	2591500	2591500
3372154151	2541623	2541341 pt						
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						337920WYWW	2591000	2591000
						337920WYVW	2591002	2591002

Metal Household Furniture Manufacturing

1997

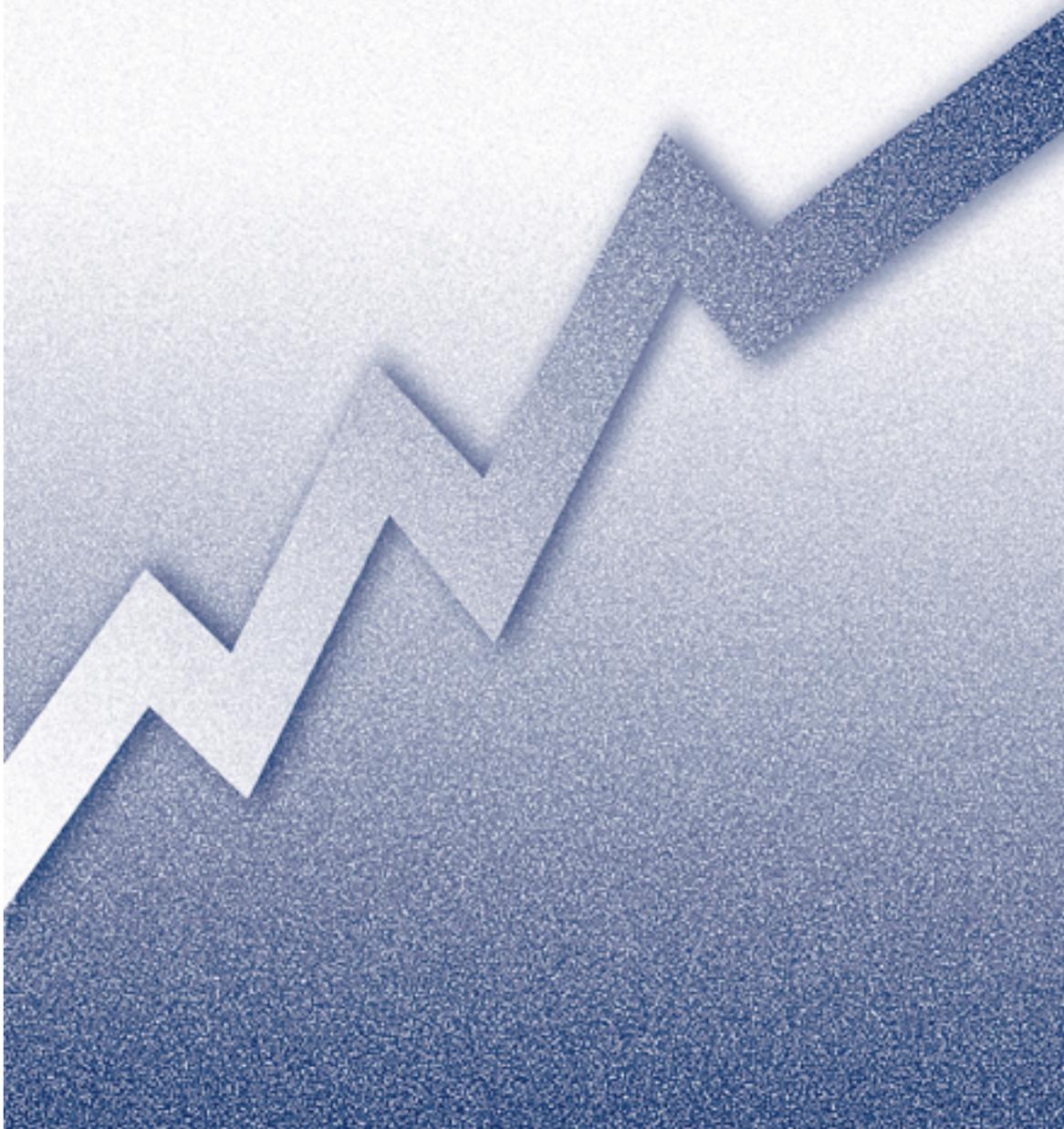
Issued August 1999

EC97M-3371D

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Metal Household Furniture Manufacturing

1997

Issued August 1999

EC97M-3371D

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337124	Metal household furniture mfg .	388	420	23 674	528 034	19 037	37 095	350 529	1 298 231	1 217 083	2 514 119	87 313
251400	Metal household furniture	N	420	23 674	528 034	19 037	37 095	350 529	1 298 231	1 217 083	2 514 119	87 313

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337124, METAL HOUSEHOLD FURNITURE MFG												
United States	1	420	142	23 674	528 034	19 037	37 095	350 529	1 298 231	1 217 083	2 514 119	87 313
Arizona	4	10	2	129	2 247	109	215	1 524	5 402	3 057	8 211	216
Arkansas	-	9	5	634	13 219	502	946	9 113	28 512	24 543	52 983	912
California	1	95	34	4 090	94 910	3 189	6 686	60 744	212 761	186 824	392 988	10 978
Florida	-	31	8	1 079	22 952	888	1 493	14 864	70 282	66 515	138 471	3 569
Georgia	-	13	3	491	6 454	402	550	5 191	16 614	20 715	41 217	1 485
Illinois	4	12	2	246	6 227	171	374	3 620	15 351	20 487	35 827	1 031
Indiana	-	14	8	2 056	43 335	1 698	3 506	29 572	130 454	100 819	224 480	7 362
Michigan	-	16	5	730	15 807	577	1 116	10 422	48 883	31 306	79 436	930
Minnesota	-	5	2	429	11 954	333	707	7 253	29 478	16 443	45 701	807
New York	2	38	11	871	23 921	593	1 215	13 165	59 295	36 603	96 363	2 471
North Carolina	1	31	15	2 240	51 468	1 738	3 942	37 601	109 757	105 733	214 652	5 166
Pennsylvania	4	19	9	1 761	40 809	1 531	2 794	30 476	90 390	86 802	177 915	6 038
Tennessee	-	9	6	1 693	36 833	1 354	2 575	26 558	62 250	36 168	97 928	5 278
Texas	1	19	8	1 393	25 839	1 157	2 175	19 700	52 621	63 797	122 966	4 469
Wisconsin	2	7	1	129	2 511	96	179	1 509	6 724	9 289	15 413	138

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337124, METAL HOUSEHOLD FURNITURE MFG		337124, METAL HOUSEHOLD FURNITURE MFG— Con.	
Companies ¹	number.. 388	Value added	\$1,000.. 1 298 231
All establishments	number.. 420	Total inventories, beginning of year	\$1,000.. 373 262
Establishments with 1 to 19 employees	number.. 278	Finished goods inventories, beginning of year	\$1,000.. 146 904
Establishments with 20 to 99 employees	number.. 79	Work-in-process inventories, beginning of year	\$1,000.. 56 142
Establishments with 100 employees or more	number.. 63	Materials and supplies inventories, beginning of year	\$1,000.. 170 216
All employees	number.. 23 674	Total inventories, end of year	\$1,000.. 365 851
Total compensation ²	\$1,000.. 658 837	Finished goods inventories, end of year	\$1,000.. 140 806
Annual payroll	\$1,000.. 528 034	Work-in-process inventories, end of year	\$1,000.. 63 435
Total fringe benefits	\$1,000.. 130 803	Materials and supplies inventories, end of year	\$1,000.. 161 610
Production workers, average for year	number.. 19 037	Gross book value of total assets at beginning of year	\$1,000.. 620 024
Production workers on March 15	number.. 20 396	Total capital expenditures (new and used)	\$1,000.. 87 313
Production workers on May 15	number.. 19 115	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 22 096
Production workers on August 15	number.. 17 647	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 65 217
Production workers on November 15	number.. 18 990	Total retirements ²	\$1,000.. 11 244
Production-worker hours	\$1,000.. 37 095	Gross book value of total assets at end of year	\$1,000.. 696 093
Production-worker wages	\$1,000.. 350 529	Total depreciation during year ²	\$1,000.. 51 945
Total cost of materials	\$1,000.. 1 217 083	Total rental payments ²	\$1,000.. 28 974
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 068 286	Buildings and other structures rental payments ²	\$1,000.. 16 584
Cost of resales	\$1,000.. 108 860	Machinery and equipment rental payments ²	\$1,000.. 12 390
Cost of fuels	\$1,000.. 9 249	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 2 071
Cost of purchased electricity	\$1,000.. 15 368	Response coverage ratio ⁴	percent.. 72
Cost of contract work	\$1,000.. 15 320	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 7 964
Quantity of electricity purchased for heat and power	1,000 kWh.. 236 254	Response coverage ratio ⁴	percent.. 72
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 5 559
Total value of shipments	\$1,000.. 2 514 119	Response coverage ratio ⁴	percent.. 72
Primary products value of shipments	\$1,000.. 2 111 072	Cost of purchased legal services ³	\$1,000.. 3 578
Secondary products value of shipments	\$1,000.. 262 060	Response coverage ratio ⁴	percent.. 72
Total miscellaneous receipts	\$1,000.. 140 987	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 647
Value of resales	\$1,000.. 137 158	Response coverage ratio ⁴	percent.. 72
Contract receipts	\$1,000.. 1 260	Cost of purchased advertising services ³	\$1,000.. 25 206
Other miscellaneous receipts	\$1,000.. 2 569	Response coverage ratio ⁴	percent.. 72
Primary products specialization ratio	percent.. 88	Cost of purchased software and other data processing services ³	\$1,000.. 1 658
Value of primary products shipments made in all industries	\$1,000.. 2 221 515	Response coverage ratio ⁴	percent.. 72
Value of primary products shipments made in this industry	\$1,000.. 2 111 072	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 339
Value of primary products shipments made in other industries	\$1,000.. 110 443	Response coverage ratio ⁴	percent.. 72
Coverage ratio	percent.. 95		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337124. METAL HOUSEHOLD FURNITURE MFG												
All establishments	1	420	142	23 674	528 034	19 037	37 095	350 529	1 298 231	1 217 083	2 514 119	87 313
Establishments with 1 to 4 employees	9	139	—	284	5 512	240	416	4 020	11 635	12 142	23 744	885
Establishments with 5 to 9 employees	8	69	—	467	9 464	382	671	6 490	19 556	20 720	40 208	1 361
Establishments with 10 to 19 employees	4	70	—	945	19 792	736	1 340	13 397	49 667	42 605	90 977	2 413
Establishments with 20 to 49 employees	1	48	48	1 584	34 673	1 167	2 168	21 531	97 628	81 587	179 063	2 410
Establishments with 50 to 99 employees	2	31	31	2 193	54 224	1 734	3 370	35 410	121 269	113 770	233 186	5 814
Establishments with 100 to 249 employees	—	38	38	5 963	132 585	4 607	8 885	87 649	317 707	314 883	642 636	16 189
Establishments with 250 to 499 employees	—	14	14	4 420	96 952	3 400	6 537	65 381	229 986	241 705	466 630	11 941
Establishments with 500 to 999 employees	1	10	10	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	196	—	1 011	18 614	813	1 395	13 518	39 683	42 389	81 999	2 902

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337124	Metal household furniture mfg	420	23 674	528 034	19 037	37 095	350 529	1 298 231	1 217 083	2 514 119	87 313
3371241	Household dining room and kitchen furniture, metal	41	4 004	93 007	3 058	6 092	63 475	215 218	182 875	395 970	6 805
3371244	Porch, lawn, outdoor, and casual furniture, metal	59	8 774	189 407	7 170	14 239	129 876	412 894	311 627	729 589	28 408
3371247	Other household furniture, metal	63	8 288	193 733	6 726	12 942	120 064	557 878	595 678	1 149 763	45 031

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337124	Metal household furniture	N	X	X	2 221 515	N	X	X	1 791 730
3371241	Household dining room and kitchen furniture, metal	N	X	X	365 034	N	X	X	372 483
33712411	Household dining room and kitchen furniture, metal	N	X	X	340 974	N	X	X	N
3371241111	Tubular dining, dinette, and breakfast set tables, metal	16	X	965.3	71 617	20	X	9832.5	77 172
3371241121	Tubular dining, dinette, and breakfast set chairs, metal	12	X	2 288.8	97 297	17	X	2 485.9	97 383
3371241131	Tubular dining, dinette, and breakfast tables (not sold with a set), metal	15	X	S	25 993	18	X	P565.5	31 535
3371241141	Tubular dining, dinette, and breakfast chairs (not sold with a set), metal	12	X	1 951.4	74 851	17	X	P2 404.6	81 044
3371241151	Kitchen cabinets, such as base, top and base, wall, utility, etc., metal	11	X	S	13 697	20	X	S	22 397
3371241161	Kitchen stools, padded and plain, metal	12	X	1 026.2	34 183	13	X	818.8	24 212
3371241171	Other dining room and kitchen furniture, including hostess carts, metal	17	X	X	23 336	18	X	X	22 497
3371241Y	Household dining room and kitchen furniture, metal, nsk	N	X	X	24 060	N	X	X	N
3371241YVV	Household dining room and kitchen furniture, metal, nsk	N	X	X	24 060	N	X	X	16 243
3371244	Porch, lawn, outdoor, and casual furniture, metal	N	X	X	699 808	N	X	X	553 402
33712441	Tubular aluminum porch, lawn, outdoor, and casual chairs, rockers, benches, chaise lounges, and settees	N	X	X	233 913	N	X	X	N
3371244111	Tubular aluminum porch, lawn, outdoor, and casual chairs, rockers, benches, chaise lounges, and settees	21	X	X	233 913	19	X	X	201 512
33712442	Other tubular aluminum and cast and wrought iron porch, lawn, outdoor, and casual furniture	N	X	X	405 673	N	X	X	N
3371244211	Other tubular aluminum porch, lawn, outdoor, and casual furniture, including gliders, swings, hammocks, and tables	17	X	X	93 503	22	X	X	71 385
3371244221	Cast and wrought iron porch, lawn, outdoor, and casual chairs, rockers, benches, chaise lounges, and settees	11	X	X	82 279	13	X	X	83 751
3371244231	Other cast and wrought iron porch, lawn, outdoor, and casual furniture, including gliders, hammocks, and tables	11	X	X	D	13	X	X	49 887
3371244241	Other porch, lawn, outdoor, and casual furniture, including picnic tables, metal	21	X	X	D	14	X	X	74 316
3371244Y	Porch, lawn, outdoor, and casual furniture, metal, nsk	N	X	X	60 222	N	X	X	N
3371244YVV	Porch, lawn, outdoor, and casual furniture, metal, nsk	N	X	X	60 222	N	X	X	72 551
3371247	Other household furniture, metal	N	X	X	946 162	N	X	X	685 357
33712471	Household folding, rollable, army, and other cots, other beds and household bed frames, metal	N	X	X	268 761	N	X	X	N
3371247111	Household folding cots, rollable cots, army cots, and other beds, metal	12	X	91 362.9	47 692	20	X	S	59 449
3371247121	Household bed frames (complete bed frames sold separately, with or without a headboard), metal	62	X	S	221 069	56	X	S	171 742
33712472	Other metal household furniture, including medicine cabinets, infants' high chairs and car seats, and card tables and chairs	N	X	X	661 144	N	X	X	N
3371247211	Household medicine cabinets, including wall-type and insert type, metal	8	X	X	69 474	9	X	X	87 104
3371247221	Infants' high chairs, metal or plastics	5	X	S	29 499	6	X	1 350.5	28 345
3371247231	Infants' car seats, metal or plastics	8	X	4 682.7	164 866	7	X	3 292.8	109 797
3371247241	Other infants' and children's furniture, including chairs, tables, playpens, play yards, and portable cribs, metal	10	X	X	272 088	10	X	X	83 182
3371247291	Other metal household furniture, including upholstered furniture, folding trays, etc.,	30	X	X	125 217	N	X	X	N
3371247Y	Other household furniture, metal, nsk	N	X	X	16 257	N	X	X	N
3371247YVV	Other household furniture, metal, nsk	N	X	X	16 257	N	X	X	D
337124W	Household furniture, metal, nsk, total	N	X	X	210 511	N	X	X	180 488
337124WY	Household furniture manufacturing, metal, nsk, total	N	X	X	210 511	N	X	X	N
337124WYVV	Household furniture manufacturing, metal, nsk, for nonadministrative-record establishments	N	X	X	136 084	N	X	X	177 626
337124WYVY	Household furniture manufacturing, metal, nsk, for administrative-record establishments	N	X	X	74 427	N	X	X	2 862

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371241	HOUSEHOLD DINING ROOM AND KITCHEN FURNITURE, METAL		
	United States	365 034	372 483
	California	112 732	90 225
	Indiana	30 226	24 872
	Michigan	18 618	N
	New York	7 466	8 447
	North Carolina	51 971	31 893
	Pennsylvania	26 047	N
	Texas	37 093	N
3371244	PORCH, LAWN, OUTDOOR, AND CASUAL FURNITURE, METAL		
	United States	699 808	553 402
	Arizona	7 937	N
	Arkansas	43 302	N
	California	89 015	39 232
	Florida	54 682	32 237
	Illinois	5 176	N
	New York	45 036	48 193
	North Carolina	53 693	33 703
	Tennessee	27 038	N
	Texas	43 237	N
3371247	OTHER HOUSEHOLD FURNITURE, METAL		
	United States	946 162	685 357
	California	68 116	125 349
	Illinois	22 498	56 337
	Massachusetts	6 205	N
	New York	22 055	8 376
	North Carolina	64 119	44 020
	Ohio	261 765	85 719
	Pennsylvania	125 685	102 835
	Texas	27 241	34 481

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337124	METAL HOUSEHOLD FURNITURE MFG				
332000AC	Metal stampings	X	8 493	X	8 379
332000AA	Other fabricated metal products, except forgings	X	71 747	X	52 859
33120017	Steel sheet and strip, including tin plate	X	38 199	X	42 244
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	93 703	X	83 619
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	48 390	X	39 276
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	47 952	X	21 252
32610017	Plastics parts, components, sheets, and other shapes (excluding plastics resins)	X	54 703	X	49 219
00190097	Hardwood dimension and parts, including wood furniture frames	X	44 882	X	40 077
32121903	Particleboard (wood)	X	23 119	X	13 242
32721101	Flat glass (plate, float, and sheet)	X	19 377	X	18 071
31332007	Coated or laminated fabrics, including vinyl coated	X	52 023	X	50 055
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	21 645	X	18 762
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	39 505	X	32 563
32221001	Paperboard containers, boxes, and corrugated paperboard	X	64 284	X	44 568
00970099	All other materials and components, parts, containers, and supplies	X	260 216	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	180 048	X	116 292

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^p 10 to 19 percent estimated; ^q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337124 METAL HOUSEHOLD FURNITURE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing metal household-type furniture and freestanding cabinets. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337124 include the following SIC industry:

2514 Metal household furniture

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337124 include establishments primarily engaged in manufacturing upholstered metal household furniture or metal box spring frames. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G.

Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3952000 pt	3952000 pt
337110WYVW pt	5712000 pt	5712000 pt	337122WYVW pt	2511002	2511002	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434002	2434002	337122WYVW pt	5712002 pt	5712002 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	2541002 pt	2541002 pt	33712241	25145	25145	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	5712002 pt	5712000 pt	337124111	2514512	2514512	337127WYVW pt	3999002 pt	3999002 pt
3371211	25120 pt	25120 pt	3371241121	2514513	2514513	3371290	25170	25170
3371211 pt	57121 pt	57120 pt	3371241131	2514515	2514515	3371290111	2517015	2517015
3371211111	2512012	2512012	3371241141	2514517	2514517	3371290211	2517018	2517018
3371211211	2512041	2512041	3371241151	2514521	2514521	3371290221	2517021	2517021
3371211311	2512045	2512045	3371241161	2514527	2514527	3371290YVW	2517000	2517000
3371211411	2512054	2512054	3371241171	2514597	2514597	3371290YVW	2517002	2517002
3371211511	2512031	2512031	3371241YVW	2514500	2514500	3372111	25212	25210 pt
3371211521	2512035	2512035	3371244	25146	25146	3372111111	2521211	2521000 pt
3371211531 pt	2512098	2512098	3371244111	2514612	2514612	3372111121	2521213	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244121	2514614	2514614	3372111131	2521214	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371244221	2514622	2514622	3372111141	2521217	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371244231	2514624	2514624	3372111151	2521219	2521000 pt
3371214	25155	25155	3371244241	2514698	2514698	3372111161	2521221	2521000 pt
3371214100	2515500	2515500	3371244YVW	2514600	2514600	3372111YVW	2521200	2521000 pt
337121W pt	25120 pt	25120 pt	3371247	25147	25147	3372114	25213	25210 pt
337121W pt	25150 pt	25150 pt	3371247111	2514733	2514733	3372114111	2521311	2521000 pt
337121W pt	57120 pt	57120 pt	3371247121	2514737	2514737	3372114121	2521313	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247211	2514775	2514775	3372114YVW	2521300	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247221	2514782	2514782	3372117	25214	25210 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247231	2514783	2514783	3372117111	2521411	2521000 pt
337121WYVW pt	2512002	2512002	3371247241	2514788	2514788	3372117211	2521413	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371247291 pt	2514789 pt	2514771	3372117311	2521415	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	3371247291 pt	2514789 pt	2514798	3372117321	2521417	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371247YVW	2514700	2514700	3372117331	2521419	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	337124W	25140	25140	3372117341	2521425	2521000 pt
3371221	25112	25112	337124WYVW	2514000	2514000	3372117351	2521427	2521000 pt
3371221 pt	57121 pt	57120 pt	337124WYVW	2514002	2514002	3372117361	2521429	2521000 pt
3371221111	2511241	2511241	3371250	25190	25190	3372117YVW	2521400	2521000 pt
3371221211	2511219	2511219	3371250111	2519011	2519011	337211A	25217	25210 pt
3371221221	2511251	2511251	3371250211	2519033	2519033	337211A111	2521711	2521000 pt
3371221231	2511271	2511271	3371250221	2519035	2519035	337211A121	2521713	2521000 pt
3371221241	2511281	2511281	3371250311 pt	2519015 pt	2519023	337211A131	2521715	2521000 pt
3371221311	2511233	2511233	3371250321	2519098	2519098	337211A141	2521719	2521000 pt
3371221321	2511235	2511235	3371250YVW	2519000	2519000	337211AYVW	2521700	2521000 pt
3371221391	2511291	2511291	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221395 pt	2511298	2511298	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	5712111	5712000 pt	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221YVW pt	2511200	2511200	3371271211	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271221	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371224	25113	25113	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224111	2511311	2511311	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224211	2511331	2511331	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224311	2511351	2511351	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224321	2511371	2511371	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224391	2511391	2511391	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371224395	2511399	2511399	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
3371224YVW	2511300	2511300	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371227	25115	25115	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
3371227111	2511511	2511511	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541339 pt
3371227121	2511513	2511513	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227131	2511515	2511515	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227141	2511517	2511517	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227211	2511521	2511521	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227311	2511535	2511535	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
			3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWWW pt...	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWWW pt...	2541000 pt	2541000 pt
337214121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWWW pt...	2542000	2542000
3372141211	2522114	2522100 pt				337215WYWWW pt...	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157	25421	25421	337215WYWWW pt...	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157111	2542113	2542113	337215WYWWW pt...	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157121	2542117	2542117	337215WYWWW pt...	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157131	2542119	2542119	337215WYWWW pt...	3499002 pt	3499002 pt
			3372157YVW	2542100	2542100			
3372144	25225	25225				3379101	25151	25151
3372144111	2522511	2522500 pt	337215A	25422	25422	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A111	2542233	2542233			
3372144YVW	2522500	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
			337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt				3379104141	2515265	2515265
3372147311	2522619	2522600 pt				3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E	25423	25423			
3372147421	2522613	2522600 pt	337215E111	2542341	2542341	3379107	25153	25153
3372147431	2522625	2522600 pt	337215E121	2542343	2542343	3379107111	2515315	2515315
3372147441	2522627	2522600 pt	337215E131	2542345	2542345	3379107121	2515317	2515317
3372147451	2522629	2522600 pt	337215E141	2542347	2542347	3379107131	2515319	2515319
3372147YVW	2522600	2522600 pt	337215E151	2542349	2542349	3379107YVW	2515300	2515300
			337215EYVW	2542300	2542300			
337214A	25227	25227	337215H pt	25424	25424	337910A	25156	25156
337214A111	2522711	2522700 pt				337910A111	2515613	2515613
337214A211	2522713	2522700 pt	337215H pt	34998 pt	34998 pt	337910A121	2515619	2515619
337214A221	2522715	2522700 pt	337215H111 pt	2542461 pt	2542463	337910AYVW	2515600	2515600
337214A231	2522719	2522700 pt	337215H211 pt	2542461 pt	2542467 pt			
337214AYVW	2522700	2522700 pt	337215H211 pt	2542464 pt	2542465	337910W	25150 pt	25150 pt
			337215H311	2542469	2542469	337910WYWWW	2515000 pt	2515000 pt
337214W	25220	25220	337215H321	2542471	2542471	337910WYVW	2515002 pt	2515002 pt
337214WYVW	2522000	2522000	337215H331	2542499	2542499			
337214WYVW	2522002	2522002	337215H341	3499896	3499899 pt	3379201	25913	25913
			337215H351	3499897	3499899 pt	3379201111	2591311	2591311
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201121	2591313	2591313
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201131	2591315	2591315
3372151121	2541415	2541121 pt				3379201YVW	2591300	2591300
3372151131	2541419	2541131 pt	337215K	24266	24266	3379204	25914	25914
3372151YVW	2541400	2541100 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
			337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335				3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt						
3372154121 pt	2541613 pt	2541336	337215W pt	24260 pt	24260 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541338 pt				3379207111	2591511	2591511
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541338 pt				3379207YVW	2591500	2591500
3372154141	2541621	2541339 pt						
3372154151	2541623	2541341 pt	337215W pt	25420	25420	337920W	25910	25910
						337920WYVW	2591000	2591000
						337920WYVW	2591002	2591002

Household Furniture (Except Wood and Metal) Manufacturing

1997

Issued August 1999

EC97M-3371E

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

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Household Furniture (Except Wood and Metal) Manufacturing

1997

Issued August 1999

EC97M-3371E

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337125	Household furniture (except wood & metal) mfg	212	216	4 597	107 013	3 579	7 070	75 185	259 662	273 828	529 508	12 581
251900	Household furniture, n.e.c.	N	216	4 597	107 013	3 579	7 070	75 185	259 662	273 828	529 508	12 581

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337125, HOUSEHOLD FURNITURE (EXCEPT WOOD & METAL) MFG												
United States	-	216	48	4 597	107 013	3 579	7 070	75 185	259 662	273 828	529 508	12 581
California	1	39	8	819	20 718	601	1 236	12 946	45 774	46 852	92 425	1 621
Florida	4	44	5	344	6 648	293	540	4 959	13 746	18 325	32 505	880
New York	3	11	2	129	2 294	86	156	1 646	4 187	4 684	8 828	243

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337125, HOUSEHOLD FURNITURE (EXCEPT WOOD & METAL) MFG		337125, HOUSEHOLD FURNITURE (EXCEPT WOOD & METAL) MFG—Con.	
Companies ¹	number.. 212	Value added	\$1,000.. 259 662
All establishments	number.. 216	Total inventories, beginning of year	\$1,000.. 67 820
Establishments with 1 to 19 employees	number.. 168	Finished goods inventories, beginning of year	\$1,000.. 30 801
Establishments with 20 to 99 employees	number.. 34	Work-in-process inventories, beginning of year	\$1,000.. 6 981
Establishments with 100 employees or more	number.. 14	Materials and supplies inventories, beginning of year	\$1,000.. 30 038
All employees	number.. 4 597	Total inventories, end of year	\$1,000.. 74 359
Total compensation ²	\$1,000.. 133 189	Finished goods inventories, end of year	\$1,000.. 35 586
Annual payroll	\$1,000.. 107 013	Work-in-process inventories, end of year	\$1,000.. 6 178
Total fringe benefits	\$1,000.. 26 176	Materials and supplies inventories, end of year	\$1,000.. 32 595
Production workers, average for year	number.. 3 579	Gross book value of total assets at beginning of year	\$1,000.. 133 203
Production workers on March 15	number.. 3 659	Total capital expenditures (new and used)	\$1,000.. 12 581
Production workers on May 15	number.. 3 530	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 1 516
Production workers on August 15	number.. 3 532	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 11 065
Production workers on November 15	number.. 3 595	Total retirements ²	\$1,000.. 3 371
Production-worker hours	1,000.. 7 070	Gross book value of total assets at end of year	\$1,000.. 142 413
Production-worker wages	\$1,000.. 75 185	Total depreciation during year ²	\$1,000.. 10 911
Total cost of materials	\$1,000.. 273 828	Total rental payments ²	\$1,000.. 11 249
Cost of materials, parts, containers, etc., consumed	\$1,000.. 238 808	Buildings and other structures rental payments ²	\$1,000.. 6 814
Cost of resales	\$1,000.. 13 793	Machinery and equipment rental payments ²	\$1,000.. 4 435
Cost of fuels	\$1,000.. 1 029	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 1 101
Cost of purchased electricity	\$1,000.. 9 254	Response coverage ratio ⁴	percent.. 81
Cost of contract work	\$1,000.. 10 944	D Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 5 483
Quantity of electricity purchased for heat and power	1,000 kWh.. 162 092	Response coverage ratio ⁴	percent.. 81
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	D Cost of purchased communications services ³	\$1,000.. 731
Total value of shipments	\$1,000.. 529 508	Response coverage ratio ⁴	percent.. 81
Primary products value of shipments	\$1,000.. 444 204	D Cost of purchased legal services ³	\$1,000.. 773
Secondary products value of shipments	\$1,000.. 62 728	Response coverage ratio ⁴	percent.. 81
Total miscellaneous receipts	\$1,000.. 22 576	D Cost of purchased accounting and bookkeeping services ³	\$1,000.. 755
Value of resales	\$1,000.. 19 461	Response coverage ratio ⁴	percent.. 81
Contract receipts	\$1,000.. D	D Cost of purchased advertising services ³	\$1,000.. 2 152
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 81
Primary products specialization ratio	percent.. 87	D Cost of purchased software and other data processing services ³	\$1,000.. 74
Value of primary products shipments made in all industries	\$1,000.. 585 571	Response coverage ratio ⁴	percent.. 81
Value of primary products shipments made in this industry	\$1,000.. 444 204	D Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 449
Value of primary products shipments made in other industries	\$1,000.. 141 367	Response coverage ratio ⁴	percent.. 81
Coverage ratio	percent.. 75		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337125. HOUSEHOLD FURNITURE (EXCEPT WOOD & METAL) MFG												
All establishments	-	216	48	4 597	107 013	3 579	7 070	75 185	259 662	273 828	529 508	12 581
Establishments with 1 to 4 employees	9	121	-	209	4 086	181	297	2 984	7 298	10 982	18 752	609
Establishments with 5 to 9 employees	5	25	-	184	4 096	142	262	2 894	7 592	10 525	18 322	516
Establishments with 10 to 19 employees	2	22	-	304	7 207	227	435	4 700	12 592	12 920	25 808	888
Establishments with 20 to 49 employees	1	27	27	830	16 717	654	1 208	11 334	32 785	39 130	70 312	1 794
Establishments with 50 to 99 employees	-	7	7	486	8 803	359	717	5 574	20 061	22 801	43 309	699
Establishments with 100 to 249 employees	-	11	11	1 467	37 501	983	2 051	23 244	94 003	111 634	200 843	6 238
Establishments with 250 to 499 employees	-	3	3	1 117	28 603	1 033	2 100	24 455	85 331	65 836	152 162	1 837
Establishments with 500 to 999 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	8	119	-	341	6 306	289	459	4 640	11 893	17 973	30 320	1 010

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337125	Household furniture (except wood & metal) mfg	216	4 597	107 013	3 579	7 070	75 185	259 662	273 828	529 508	12 581

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337125	Household furniture, except wood and metal	N	X	X	585 571	N	X	X	483 307
3371250	Household furniture, except wood and metal	N	X	X	585 571	N	X	X	483 307
33712501	Plastics and fibrous glass household cabinets, including radio, phonograph, television, stereo, and combinations thereof	N	X	X	261 745	N	X	X	N
3371250111	Plastics and fibrous glass household cabinets, including radio, phonograph, television, stereo, and combinations thereof	31	X	X	261 745	20	X	X	252 780
33712502	Reed and rattan household seating, including willow, wicker, and cane, and other reed and rattan household furniture	N	X	X	97 554	N	X	X	N
3371250211	Reed and rattan household seating, including willow, wicker, and cane	11	X	X	68 714	14	X	X	52 878
3371250221	Other reed and rattan household furniture	13	X	X	28 840	14	X	X	41 681
33712503	Plastics and fibrous glass household seating and furniture, and other household furniture (except wood and metal), nec	N	X	X	166 052	N	X	X	N
3371250311	Other plastics and fibrous glass household furniture, including seating	21	X	X	116 892	N	X	X	N
3371250321	Other household furniture (except wood and metal), nec	28	X	X	49 160	18	X	X	20 848
3371250Y	Household furniture (except wood and metal), nsk	N	X	X	60 220	N	X	X	N
3371250YWW	Household furniture (except wood and metal), nsk, for nonadministrative-record establishments	N	X	X	31 056	N	X	X	61 442
3371250YWY	Household furniture (except wood and metal), nsk, for administrative-record establishments	N	X	X	29 164	N	X	X	12 944

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337125	HOUSEHOLD FURNITURE (EXCEPT WOOD & METAL) MFG				
32100025	Hardwood lumber, rough and dressed	X	1 669	X	444
32100031	Softwood lumber, rough and dressed	X	D	X	D
32191203	Hardwood cut stock and dimension, excluding furniture frames	X	D	X	D
32121201	Softwood plywood	X	95	X	200
32121101	Hardwood plywood	X	681	X	240
32121105	Hardwood veneer	X	D	X	D
32121903	Particleboard (wood)	X	721	X	145
32121907	Medium density fiberboard (MDF)	X	D	X	361
32121909	Hardboard	X	D	X	57
33721500	Furniture frames, wood	X	8 456	X	D
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	4 391	X	5 514
32552001	Adhesives and sealants	X	D	X	328
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	112 443	X	102 950
32610017	Plastics parts, components, sheets, and other shapes (excluding plastics resins)	X	8 268	X	5 217
32721101	Flat glass (plate, float, and sheet)	X	795	X	914
32721503	Mirrors, framed and unframed	X	D	X	54
31320027	Fabrics, all types	X	4 368	X	2 258
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	4 929	X	645
32221001	Paperboard containers, boxes, and corrugated paperboard	X	9 887	X	15 201
00970099	All other materials and components, parts, containers, and supplies	X	31 050	X	41 287
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	44 760	X	48 115

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337125 HOUSEHOLD FURNITURE (EXCEPT WOOD AND METAL) MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing household-type furniture of materials other than wood or metal, such as plastics, reed, rattan, wicker, and fiberglass. The furniture may be made

on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337125 include the following SIC industry:

2519 Household furniture, n.e.c.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3999000 pt	3999000 pt
337110WYVW pt	2434002	2434002	337122WYVW pt	2511002	2511002	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2541002 pt	2541002 pt	337122WYVW pt	5712002 pt	5712002 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	5712002 pt	5712000 pt	33712241	25145	25145	337127WYVW pt	3952002 pt	3952002 pt
3371211 pt	25120 pt	25120 pt	3371224111	2514512	2514512	337127WYVW pt	3999002 pt	3999002 pt
3371211 pt	57121 pt	57120 pt	33712241121	2514513	2514513	3371290	25170	25170
3371211111	2512012	2512012	33712241131	2514515	2514515	3371290111	2517015	2517015
3371211211	2512041	2512041	33712241141	2514517	2514517	3371290211	2517018	2517018
3371211311	2512045	2512045	33712241151	2514521	2514521	3371290221	2517021	2517021
3371211411	2512054	2512054	33712241161	2514527	2514527	3371290YVW	2517000	2517000
3371211511	2512031	2512031	33712241171	2514597	2514597	3371290YVW	2517002	2517002
3371211521	2512035	2512035	33712241YVW	2514500	2514500	3372111	25212	25210 pt
3371211531 pt	2512098	2512098	33712244	25146	25146	3372111111	2521211	2521000 pt
3371211531 pt	5712121	5712000 pt	33712244111	2514612	2514612	3372111121	2521213	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	33712244121	2514614	2514614	3372111131	2521214	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	33712244221	2514622	2514622	3372111141	2521217	2521000 pt
3371214	25155	25155	33712244231	2514624	2514624	3372111151	2521219	2521000 pt
3371214100	2515500	2515500	33712244241	2514698	2514698	3372111161	2521221	2521000 pt
337121W pt	25120 pt	25120 pt	33712244YVW	2514600	2514600	3372111YVW	2521200	2521000 pt
337121W pt	25150 pt	25150 pt	3371247	25147	25147	3372114	25213	25210 pt
337121W pt	57120 pt	57120 pt	3371247111	2514733	2514733	3372114111	2521311	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247121	2514737	2514737	3372114121	2521313	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247211	2514775	2514775	3372114YVW	2521300	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247221	2514782	2514782	3372117	25214	25210 pt
337121WYVW pt	2512002	2512002	3371247231	2514783	2514783	3372117111	2521411	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371247241	2514788	2514788	3372117211	2521413	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	3371247291 pt	2514789 pt	2514771	3372117311	2521415	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371247291 pt	2514789 pt	2514798	3372117321	2521417	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	3371247YVW	2514700	2514700	3372117331	2521419	2521000 pt
337121YVW pt	2512000 pt	2512000 pt	337124W	25140	25140	3372117341	2521425	2521000 pt
337121YVW pt	5712100 pt	5712000 pt	337124WYVW	2514000	2514000	3372117351	2521427	2521000 pt
3371221 pt	25112	25112	337124WYVW	2514002	2514002	3372117361	2521429	2521000 pt
3371221 pt	57121 pt	57120 pt	3371250	25190	25190	3372117YVW	2521400	2521000 pt
3371221111	2511241	2511241	3371250111	2519011	2519011	337211A	25217	25210 pt
3371221211	2511219	2511219	3371250211	2519033	2519033	337211A111	2521711	2521000 pt
3371221221	2511251	2511251	3371250221	2519035	2519035	337211A121	2521713	2521000 pt
3371221231	2511271	2511271	3371250311 pt	2519015 pt	2519023	337211A131	2521715	2521000 pt
3371221241	2511281	2511281	3371250321	2519098	2519098	337211A141	2521719	2521000 pt
3371221311	2511233	2511233	3371250YVW	2519000	2519000	337211AYVW	2521700	2521000 pt
3371221321	2511235	2511235	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221391	2511291	2511291	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	2511298	2511298	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221395 pt	5712111	5712000 pt	3371271131	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	2511200	2511200	3371271121	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224	25113	25113	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224111	2511311	2511311	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224211	2511331	2511331	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224311	2511351	2511351	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224321	2511371	2511371	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371224391	2511391	2511391	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
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1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
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3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
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3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
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3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
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3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYWW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Institutional Furniture Manufacturing

1997

Issued August 1999

EC97M-3371F

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Institutional Furniture Manufacturing

1997

Issued August 1999

EC97M-3371F

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337127 253120	Institutional furniture mfg Public building & related furniture (pt)	965	997	36 898	974 559	27 485	50 883	597 084	2 077 107	1 839 648	3 917 934	108 354
259910	Furniture & fixtures, n.e.c. (pt)	N	257	14 035	356 860	10 582	18 716	228 287	814 736	769 854	1 579 497	49 722
395220	Lead pencils & art goods (pt)	N	726	22 347	603 615	16 474	31 286	360 104	1 236 614	1 049 998	2 293 392	57 668
399975	Manufacturing industries, n.e.c. (pt)	N	9	187	5 901	141	234	2 443	9 048	8 111	16 749	244
		N	5	329	8 183	288	647	6 250	16 709	11 685	28 296	720

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
337127, INSTITUTIONAL FURNITURE MFG												
United States	1	997	366	36 898	974 559	27 485	50 883	597 084	2 077 107	1 839 648	3 917 934	108 354
Alabama	-	21	11	581	13 969	458	817	9 222	30 231	35 759	66 519	2 757
Arizona	3	11	3	231	6 959	177	369	4 312	17 363	6 241	23 165	2 140
Arkansas	-	22	11	2 569	55 757	2 121	3 077	43 352	130 788	137 761	264 603	5 582
California	1	123	43	4 451	121 117	3 339	6 365	72 680	257 542	182 327	435 327	6 433
Colorado	-	18	8	872	25 929	665	1 184	14 244	36 614	47 334	84 221	2 832
Florida	1	64	15	1 765	49 876	1 197	2 247	26 322	93 823	102 139	194 851	7 620
Idaho	-	6	3	111	2 172	90	144	1 384	3 702	2 303	6 023	83
Illinois	2	58	19	1 647	44 754	1 262	2 393	25 935	105 061	81 936	186 912	3 885
Indiana	-	27	8	852	20 534	656	1 233	13 683	50 535	30 844	80 650	1 566
Iowa	1	11	5	259	5 273	203	387	3 476	10 893	10 217	20 896	538
Kansas	1	16	8	540	17 985	397	928	10 919	38 515	25 580	64 311	2 583
Louisiana	1	5	2	224	3 070	171	176	1 924	5 821	4 935	10 758	357
Maryland	5	10	5	247	6 513	190	349	3 729	13 281	7 942	21 024	519
Massachusetts	-	20	10	1 110	34 804	781	1 491	20 416	73 416	47 844	121 059	4 847
Michigan	-	48	19	2 534	83 482	1 898	3 737	51 906	203 947	144 254	347 010	8 217
Minnesota	-	20	12	1 547	50 778	1 051	1 950	27 961	105 286	68 251	172 538	7 167
Missouri	-	20	18	1 449	39 210	1 050	2 063	23 042	92 942	80 500	172 935	5 328
Nebraska	1	4	2	156	3 657	141	325	3 329	3 960	8 543	12 453	191
New Jersey	3	34	14	785	23 229	623	1 239	14 007	45 626	31 370	77 381	1 244
New York	3	61	15	1 065	24 677	816	1 496	15 560	53 661	38 630	92 035	1 732
North Carolina	1	42	13	1 009	21 285	741	1 311	13 948	40 382	43 824	84 385	1 646
Oklahoma	1	7	1	137	3 318	104	167	1 324	5 438	4 226	9 679	87
Oregon	4	11	3	190	5 040	144	279	3 121	9 742	5 096	14 979	279
Pennsylvania	-	43	19	1 927	61 620	1 248	2 506	32 128	125 726	136 743	263 498	4 509
South Carolina	-	12	4	497	12 434	288	548	7 112	30 952	60 811	93 219	929
Tennessee	-	36	16	2 273	44 539	1 720	3 363	29 415	100 693	116 671	218 159	5 092
Texas	-	53	25	2 403	50 363	1 837	3 034	31 440	106 846	144 437	249 642	5 140
Utah	1	9	2	211	5 155	131	237	2 525	15 847	13 077	28 886	898
Virginia	-	15	4	328	9 089	273	425	6 280	15 693	11 849	27 432	1 118
Washington	1	30	8	744	19 703	576	1 053	13 485	38 764	30 834	69 177	1 400
Wisconsin	-	21	9	1 026	28 058	727	1 405	16 515	58 166	57 772	116 962	2 809

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337127, INSTITUTIONAL FURNITURE MFG		337127, INSTITUTIONAL FURNITURE MFG—Con.	
Companies ¹	number.. 965	Value added .....	..\$1,000.. 2 077 107
All establishments	number.. 997	Total inventories, beginning of year .....	..\$1,000.. 546 324
Establishments with 1 to 19 employees	number.. 631	Finished goods inventories, beginning of year .....	..\$1,000.. 145 144
Establishments with 20 to 99 employees	number.. 280	Work-in-process inventories, beginning of year .....	..\$1,000.. 133 145
Establishments with 100 employees or more	number.. 86	Materials and supplies inventories, beginning of year .....	..\$1,000.. 268 035
All employees	number.. 36 898	Total inventories, end of year .....	..\$1,000.. 575 968
Total compensation ² .....	..\$1,000.. 1 181 428	Finished goods inventories, end of year .....	..\$1,000.. 130 932
Annual payroll .....	..\$1,000.. 974 559	Work-in-process inventories, end of year .....	..\$1,000.. 146 178
Total fringe benefits .....	..\$1,000.. 206 869	Materials and supplies inventories, end of year .....	..\$1,000.. 298 858
Production workers, average for year	number.. 27 485	Gross book value of total assets at beginning of year .....	..\$1,000.. 890 012
Production workers on March 12	number.. 26 869	Total capital expenditures (new and used) .....	..\$1,000.. 108 354
Production workers on May 12	number.. 27 218	Capital expenditures for buildings and other structures	
Production workers on August 12	number.. 27 908	(new and used) .....	..\$1,000.. 20 418
Production workers on November 12	number.. 27 945	Capital expenditures for machinery and equipment (new	
Production-worker hours .....	..1,000.. 50 883	and used) .....	..\$1,000.. 87 936
Production-worker wages .....	..\$1,000.. 597 084	Total retirements ² .....	..\$1,000.. 27 824
Total cost of materials .....	..\$1,000.. 1 839 648	Gross book value of total assets at end of year .....	..\$1,000.. 970 542
Cost of materials, parts, containers, etc., consumed .....	..\$1,000.. 1 456 031	Total depreciation during year ² .....	..\$1,000.. 71 310
Cost of resales .....	..\$1,000.. 272 248	Total rental payments ² .....	..\$1,000.. 74 421
Cost of fuels .....	..\$1,000.. 16 209	Buildings and other structures rental payments ² .....	..\$1,000.. 30 103
Cost of purchased electricity .....	..\$1,000.. 32 411	Machinery and equipment rental payments ² .....	..\$1,000.. 44 318
Cost of contract work .....	..\$1,000.. 62 749	Cost of purchased services for the repair of buildings and other	
Quantity of electricity purchased for heat and power .....	..1,000 kWh.. 497 157	structures ³ .....	..\$1,000.. 5 963
Quantity of electricity generated less sold for heat and power .....	..1,000 kWh.. -	Response coverage ratio ⁴	percent.. 77
Total value of shipments .....	..\$1,000.. 3 917 934	Cost of purchased services for the repair of machinery and	
Primary products value of shipments .....	..\$1,000.. 3 184 011	equipment ³ .....	..\$1,000.. 12 204
Secondary products value of shipments .....	..\$1,000.. 345 942	Response coverage ratio ⁴	percent.. 77
Total miscellaneous receipts .....	..\$1,000.. 387 981	Cost of purchased communications services ³ .....	..\$1,000.. 9 815
Value of resales .....	..\$1,000.. 338 164	Response coverage ratio ⁴	percent.. 77
Contract receipts .....	..\$1,000.. 7 663	Cost of purchased legal services ³ .....	..\$1,000.. 4 004
Other miscellaneous receipts .....	..\$1,000.. 42 154	Response coverage ratio ⁴	percent.. 77
Primary products specialization ratio	percent.. 90	Cost of purchased accounting and bookkeeping services ³ .....	..\$1,000.. 4 748
Value of primary products shipments made in all industries .....	..\$1,000.. 3 541 878	Response coverage ratio ⁴	percent.. 77
Value of primary products shipments made in this industry .....	..\$1,000.. 3 184 011	Cost of purchased advertising services ³ .....	..\$1,000.. 24 123
Value of primary products shipments made in other		Response coverage ratio ⁴	percent.. 77
industries .....	..\$1,000.. 357 867	Cost of purchased software and other data processing	
Coverage ratio	percent.. 89	services ³ .....	..\$1,000.. 5 343
		Response coverage ratio ⁴	percent.. 77
		Cost of purchased refuse removal (including hazardous waste)	
		services ³ .....	..\$1,000.. 2 555
		Response coverage ratio ⁴	percent.. 77

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337127, INSTITUTIONAL FURNITURE MFG												
All establishments	1	997	366	36 898	974 559	27 485	50 883	597 084	2 077 107	1 839 648	3 917 934	108 354
Establishments with 1 to 4 employees	8	313	-	663	14 247	534	823	9 142	27 464	25 916	53 469	1 416
Establishments with 5 to 9 employees	7	154	-	1 033	22 775	783	1 224	14 617	50 599	41 538	91 998	2 599
Establishments with 10 to 19 employees	4	164	-	2 283	54 980	1 731	2 987	35 703	107 976	89 329	198 134	4 535
Establishments with 20 to 49 employees	2	176	176	5 486	137 216	4 175	7 617	85 004	271 340	214 357	496 999	14 205
Establishments with 50 to 99 employees	1	104	104	7 153	174 308	5 427	10 140	108 366	371 272	318 377	686 509	17 309
Establishments with 100 to 249 employees	-	67	67	10 892	307 916	7 965	15 751	183 346	654 680	614 161	1 270 535	39 578
Establishments with 250 to 499 employees	-	13	13	4 440	130 475	2 995	5 863	68 027	296 354	269 446	563 188	18 121
Establishments with 500 to 999 employees	-	5	5	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	-	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	304	-	1 346	24 763	1 072	1 462	16 576	46 339	53 544	100 289	2 947

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337127	Institutional furniture mfg .	997	36 898	974 559	27 485	50 883	597 084	2 077 107	1 839 648	3 917 934	108 354
3371271	School furniture, except stone and concrete, excluding library furniture .	49	6 484	159 725	4 922	8 096	106 216	357 389	354 051	709 018	26 633
3371274	Public building furniture, except school and restaurant furniture	101	6 899	184 193	5 162	9 971	113 573	436 400	372 839	805 535	20 869
3371277	Furniture and fixtures, nec	162	11 073	310 872	8 166	16 162	187 746	660 908	627 396	1 289 169	32 211
337127A	Other furniture, nec	132	7 667	221 962	5 607	10 795	125 099	452 102	311 884	757 329	18 552

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337127	Institutional furniture	N	X	X	3 541 878	N	X	X	N
3371271	School furniture, except stone and concrete, excluding library furniture	N	X	X	543 858	N	X	X	N
33712711	School single-pupil units and chairs, excluding library	N	X	X	218 346	N	X	X	N
3371271111	School single-pupil units, excluding library	12	X	S	123 900	17	X	S	116 306
3371271121	School chairs, all-purpose (nonfolding), excluding library	13	X	4 188.9	94 446	20	X	S	99 541
33712712	School storage units and furniture except single-pupil units and chairs (excluding library)	N	X	X	323 790	N	X	X	N
3371271211	School storage cabinets, excluding library	29	X	X	97 800	48	X	X	75 751
3371271221	Other school furniture (designed specifically for use in schools)	56	X	X	225 990	N	X	X	N
3371271Y	School furniture, except stone and concrete (excluding library furniture), nsk	N	X	X	1 722	N	X	X	N
3371271YVW	School furniture, except stone and concrete (excluding library furniture), nsk	N	X	X	1 722	N	X	X	N
3371274	Public building furniture, except school and restaurant furniture	N	X	X	849 643	N	X	X	N
33712741	Public building furniture, including church and library furniture, except school and restaurant furniture	N	X	X	849 643	N	X	X	N
3371274111	Library furniture, all types (including chairs, charging desks, study carrels, reading tables, etc.)	26	X	X	56 963	21	X	X	28 346
3371274121	Church pews	20	X	X	51 190	28	X	X	34 650
3371274131	Church furniture, except pews (pulpits, alters, lecterns, etc.)	26	X	X	16 884	24	X	X	18 849
3371274141	Folding tables, including folding banquet tables, except school, restaurant, household, office, or library	15	X	S	67 808	18	X	S	70 104
3371274151	Fixed chairs and seats, including theater, auditorium, and institutional (except school, restaurant, household, office, or library)	8	X	1 795.7	172 258	9	X	S	53 709
3371274161	Portable folding chairs, single or ganged, including theater, auditorium, and institutional (except school, restaurant, household, office, or library)	8	X	4 555.2	40 616	6	X	4 328.6	37 946
3371274171	Stacking chairs and seats, including theater, auditorium, and institutional (except school, restaurant, household, office, or library)	18	X	584.6	43 567	24	X	569.0	79 212
3371274175	Beauty and barber chairs	11	X	X	25 886	N	X	X	N
3371274181	Other chairs and seats, including freestanding, theater, auditorium, and institutional (except school, restaurant, household, office, or library)	15	X	X	93 004	17	X	X	52 383
3371274191	Stadium and bleacher seating, including grandstands	14	X	X	147 750	18	X	X	130 566
3371274195	Other public building furniture, nec	43	X	X	133 717	39	X	X	82 413
3371274Y	Public building furniture, except school and restaurant furniture, nsk	N	X	X	-	N	X	X	N
3371274YVW	Public building furniture, except school and restaurant furniture, nsk	N	X	X	-	N	X	X	N
3371277	Furniture and fixtures, nec	N	X	X	1 041 534	N	X	X	904 272
33712771	Chairs, stools, booths, bars, and back bars for restaurants, cafeterias, and bars	N	X	X	873 944	N	X	X	N
3371277111	Upholstered chairs and stools for restaurants, cafeterias, bars, and bowling centers, wood	20	X	X	148 546	46	X	X	146 182
3371277121	Nonupholstered chairs and stools for restaurants, cafeterias, bars, and bowling centers, wood	12	X	X	36 700	20	X	X	28 663
3371277131	Metal chairs and stools for restaurants, cafeterias, bars, and bowling centers	23	X	X	89 126	26	X	X	77 745
3371277141	Booths, bars, and back bars for restaurants, cafeterias, bars, and bowling centers	63	X	X	105 687	79	X	X	101 375
3371277191	Other restaurant, cafeteria, bar, and bowling center furniture, nec	117	X	X	493 885	163	X	X	446 582
3371277Y	Restaurant, cafeteria, and bar furniture and fixtures, nsk	N	X	X	167 590	N	X	X	N
3371277YVW	Restaurant, cafeteria, and bar furniture and fixtures, nsk	N	X	X	167 590	N	X	X	103 725

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337127	Institutional furniture—Con.								
337127A	Other furniture, nec.....	N	X	X	766 699	N	X	X	N
337127A2	Other furniture, nec.....	N	X	X	740 853	N	X	X	N
337127A211	Industrial work benches and stools.....	44	X	X	112 904	35	X	X	62 649
337127A221	Drafting and drawing tables made of metal.....	2	X	X	D	N	X	X	N
337127A231	Drafting and drawing tables made of wood.....	3	X	X	1 744	N	X	X	N
337127A241	Drafting and drawing tables made of other materials.....	2	X	X	D	N	X	X	N
337127A291	Other furniture and fixtures, nec (including ship furniture, amusement game cabinets, etc.).....	137	X	X	607 381	134	X	X	292 962
337127AY	Other furniture and fixtures, nsk.....	N	X	X	25 846	N	X	X	N
337127AYWV	Other furniture and fixtures, nsk.....	N	X	X	25 846	N	X	X	N
337127W	Institutional furniture manufacturing, nsk, total.....	N	X	X	340 144	N	X	X	N
337127WY	Institutional furniture manufacturing, nsk, total.....	N	X	X	340 144	N	X	X	N
337127WYWW	Institutional furniture manufacturing, nsk, for nonadministrative-record establishments.....	N	X	X	244 818	N	X	X	N
337127WYWY	Institutional furniture manufacturing, nsk, for administrative-record establishments.....	N	X	X	95 326	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371271	SCHOOL FURNITURE, EXCEPT STONE AND CONCRETE, EXCLUDING LIBRARY FURNITURE		
	United States.....	543 858	N
	Illinois.....	23 550	N
	Indiana.....	6 808	N
	Michigan.....	29 735	N
	Pennsylvania.....	28 165	N
	Texas.....	76 867	N
	Utah.....	3 489	N
	Wisconsin.....	25 024	N
3371274	PUBLIC BUILDING FURNITURE, EXCEPT SCHOOL AND RESTAURANT FURNITURE		
	United States.....	849 643	N
	Alabama.....	24 129	N
	California.....	45 492	N
	Illinois.....	42 322	N
	Indiana.....	72 555	N
	Iowa.....	12 834	N
	Kentucky.....	4 017	N
	Michigan.....	165 133	N
	Missouri.....	27 279	N
	New York.....	30 618	N
	North Carolina.....	44 643	N
	Pennsylvania.....	23 723	N
	Tennessee.....	10 239	N
	Texas.....	103 196	N
	Virginia.....	2 559	N
	Washington.....	3 633	N
	Wisconsin.....	60 417	N

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3371277	FURNITURE AND FIXTURES, NEC		
	United States	1 041 534	904 272
	Alabama	7 547	9 597
	Arkansas	48 424	36 205
	California	147 376	98 292
	Colorado	26 537	28 704
	Florida	66 695	41 328
	Georgia	21 634	28 680
	Illinois	43 664	43 762
	Indiana	19 168	7 716
	Kansas	14 923	30 753
	Massachusetts	39 369	20 911
	Michigan	61 532	30 405
	Minnesota	52 250	38 653
	Missouri	81 130	85 125
	New Jersey	26 170	33 463
	New York	19 721	17 687
	North Carolina	25 332	39 757
	Ohio	8 936	24 803
	Pennsylvania	32 703	11 884
	South Carolina	35 735	21 382
	Tennessee	130 526	111 989
	Texas	10 409	19 927
	Washington	11 227	6 924
	Wisconsin	41 908	38 457
337127A	OTHER FURNITURE, NEC		
	United States	766 699	N
	Alabama	9 527	N
	Arkansas	13 203	N
	California	124 619	N
	Florida	20 790	N
	Illinois	25 448	N
	Indiana	55 487	N
	Michigan	64 034	N
	Minnesota	21 131	N
	Mississippi	14 544	N
	Missouri	16 073	N
	New Jersey	16 158	N
	New York	17 563	N
	North Carolina	2 931	N
	Ohio	12 866	N
	Oregon	8 914	N
	Pennsylvania	86 962	N
	Tennessee	21 111	N
	Texas	19 179	N
	Washington	21 407	N
	Wisconsin	21 120	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337127	INSTITUTIONAL FURNITURE MFG				
332000AC	Metal stampings	X	24 926	X	N
33200043	All other fabricated metal products (except castings and forgings)	X	18 320	X	N
33210001	Forgings	X	2 206	X	N
33100035	Castings (rough and semifinished)	X	13 882	X	N
33120017	Steel sheet and strip, including tin plate	X	138 853	X	N
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	61 972	X	N
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	18 553	X	N
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	36 780	X	N
33100077	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	3 796	X	N
32100025	Hardwood lumber, rough and dressed	X	117 886	X	N
32100031	Softwood lumber, rough and dressed	X	7 539	X	N
00190097	Hardwood dimension and parts, including wood furniture frames	X	26 054	X	N
32121105	Hardwood veneer	X	11 970	X	N
32121101	Hardwood plywood	X	34 286	X	N
32121201	Softwood plywood	X	9 635	X	N

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337127	INSTITUTIONAL FURNITURE MFG—Con.				
32121903	Particleboard (wood)	X	30 636	X	N
32121907	Medium density fiberboard (MDF)	X	8 244	X	N
32121909	Hardboard	X	8 019	X	N
32613001	Plastics laminated sheets	X	52 402	X	N
32619909	Plastics furniture parts and components	X	67 394	X	N
32615000	Formed and slab stock for pillows, cushions, seating, etc. (urethane)	X	20 809	X	N
31332007	Coated or laminated fabrics, including vinyl coated	X	22 044	X	N
31321019	Uncoated broadwoven fabrics for upholstery	X	18 820	X	N
32721101	Flat glass (plate, float, and sheet)	X	2 376	X	N
32552001	Adhesives and sealants	X	8 825	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	26 503	X	N
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	92 656	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	36 654	X	N
00970099	All other materials and components, parts, containers, and supplies	X	250 923	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	283 068	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337127 INSTITUTIONAL FURNITURE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing institutional-type furniture (e.g., library, school, theater, and church furniture). The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337127 include the following SIC industries:

- 2531 Public building and related furniture (pt)
- 2599 Furniture and fixtures, n.e.c. (pt)

- 3952 Lead pencils and art goods (pt)
- 3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337127 do not include establishments primarily engaged in manufacturing wood or nonwood lunchroom tables and chairs. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3952000 pt	3952000 pt
337110WYVW pt	5712000 pt	2434002	337122WYVW pt	2511002	2511002	337127WYVW pt	3999000 pt	3999000 pt
337110WYVW pt	2434002	2434002	337122WYVW pt	5712002 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2541002 pt	2541002 pt	33712241	25145	25145	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	5712002 pt	5712000 pt	3371241111	2514512	2514512	337127WYVW pt	3952002 pt	3952002 pt
3371211 pt	25120 pt	25120 pt	3371241121	2514513	2514513	337127WYVW pt	3999002 pt	3999002 pt
3371211 pt	57121 pt	57120 pt	3371241131	2514515	2514515	3371290	25170	25170
3371211111	2512012	2512012	3371241141	2514517	2514517	3371290111	2517015	2517015
3371211211	2512041	2512041	3371241151	2514521	2514521	3371290211	2517018	2517018
3371211311	2512045	2512045	3371241161	2514527	2514527	3371290221	2517021	2517021
3371211411	2512054	2512054	3371241171	2514597	2514597	3371290YVW	2517000	2517000
3371211511	2512031	2512031	3371241YVW	2514500	2514500	3371290YVW	2517002	2517002
3371211521	2512035	2512035	3371244	25146	25146	3372111	25212	25210 pt
3371211531 pt	2512098	2512098	3371244111	2514612	2514612	3372111111	2521211	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244121	2514614	2514614	3372111121	2521213	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371244221	2514622	2514622	3372111131	2521214	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371244231	2514624	2514624	3372111141	2521217	2521000 pt
3371214	25155	25155	3371244241	2514698	2514698	3372111151	2521219	2521000 pt
3371214100	2515500	2515500	3371244YVW	2514600	2514600	3372111161	2521221	2521000 pt
337121W pt	25120 pt	25120 pt	3371247	25147	25147	3372111YVW	2521200	2521000 pt
337121W pt	25150 pt	25150 pt	3371247111	2514733	2514733	3372114	25213	25210 pt
337121W pt	57120 pt	57120 pt	3371247121	2514737	2514737	3372114111	2521311	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247211	2514775	2514775	3372114121	2521313	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247221	2514782	2514782	3372114YVW	2521300	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247231	2514783	2514783	3372117	25214	25210 pt
337121WYVW pt	2512002	2512002	3371247241	2514788	2514788	3372117111	2521411	2521000 pt
337121WYVW pt	2512002	2512002	3371247291 pt	2514789 pt	2514771	3372117121	2521413	2521000 pt
337121WYVW pt	5715002 pt	5715002 pt	3371247YVW	2514700	2514700	3372117311	2521415	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	337124W	25140	25140	3372117321	2521417	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	337124WYVW	2514000	2514000	3372117331	2521419	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	337124WYVW	2514002	2514002	3372117341	2521425	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	3372117351	2521427	2521000 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	3372117361	2521429	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	3372117YVW	2521400	2521000 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A	25217	25210 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A111	2521711	2521000 pt
3371221231	2511271	2511271	3371250311 pt	2519015 pt	2519025	337211A121	2521713	2521000 pt
3371221241	2511281	2511281	3371250321	2519098	2519098	337211A131	2521715	2521000 pt
3371221311	2511233	2511233	3371250YVW	2519000	2519000	337211A141	2521719	2521000 pt
3371221321	2511235	2511235	3371250YVW	2519002	2519002	337211AYVW	2521700	2521000 pt
3371221391	2511291	2511291	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221395 pt	2511298	2511298	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	5712111	5712000 pt	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221YVW pt	2511200	2511200	3371271211	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271221	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371224	25113	25113	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224111	2511311	2511311	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224211	2511331	2511331	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224311	2511351	2511351	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224321	2511371	2511371	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224391	2511391	2511391	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371224395	2511399	2511399	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
3371224YVW	2511300	2511300	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371227	25115	25115	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
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3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYVW	2591002	2591002
3372154151	2541623	2541341 pt						

Wood Television, Radio, and Sewing Machine Cabinet Manufacturing

1997

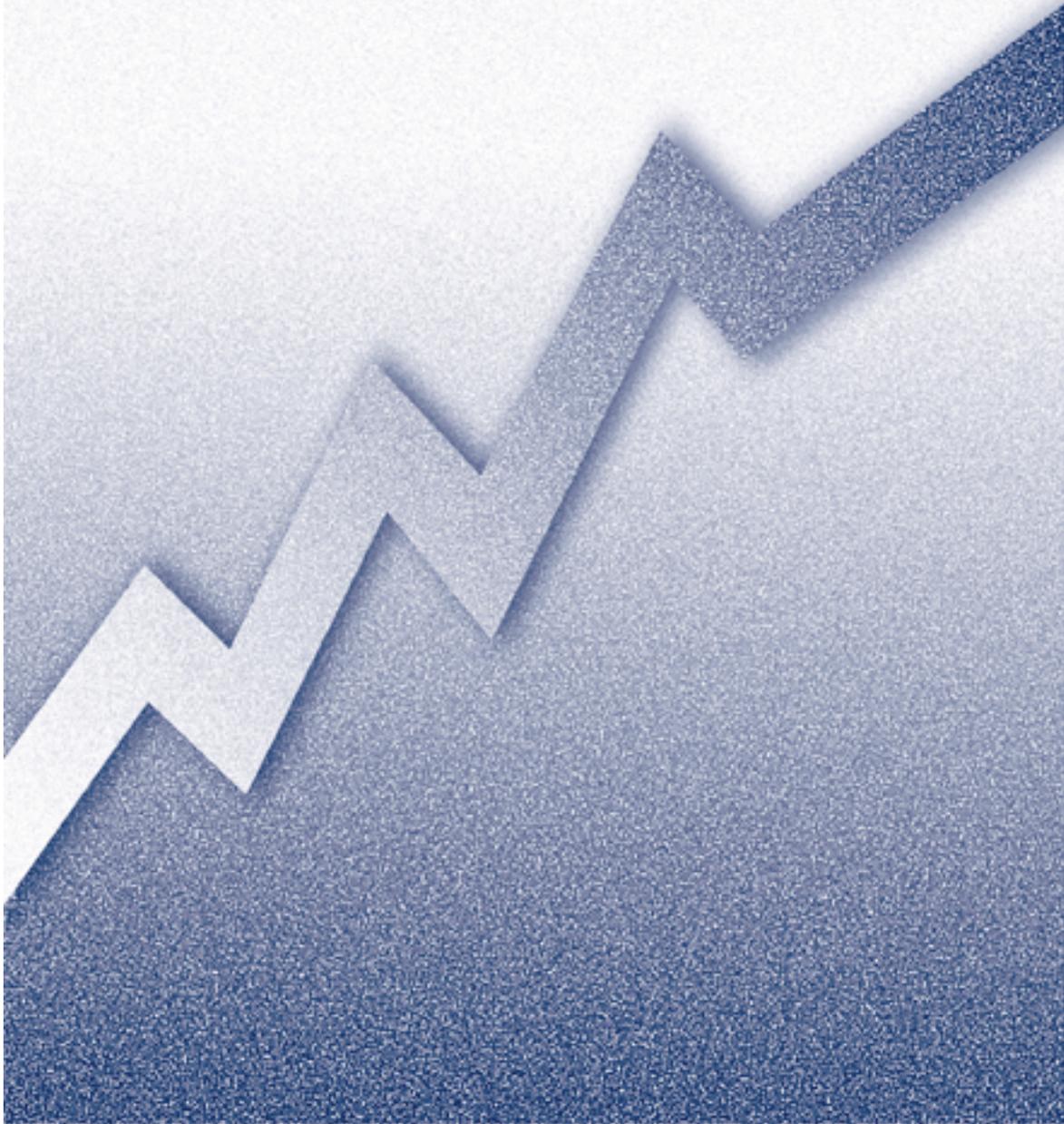
Issued July 1999

EC97M-3371G

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Wood Television, Radio, and Sewing Machine Cabinet Manufacturing

1997

Issued July 1999

EC97M-3371G

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337129	Wood television, radio, & sewing machine cabinet mfg...	97	98	3 764	74 632	3 244	6 226	56 370	142 913	150 138	298 239	4 818
251700	Wood TV & radio cabinets.....	N	98	3 764	74 632	3 244	6 226	56 370	142 913	150 138	298 239	4 818

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337129, WOOD TELEVISION, RADIO, & SEWING MACHINE CABINET MFG												
United States	-	98	29	3 764	74 632	3 244	6 226	56 370	142 913	150 138	298 239	4 818
California	1	19	9	644	12 194	569	1 034	8 783	26 550	31 136	58 206	1 299
New York	1	8	3	105	2 242	80	125	1 312	6 062	5 118	11 185	125

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337129, WOOD TELEVISION, RADIO, & SEWING MACHINE CABINET MFG		337129, WOOD TELEVISION, RADIO, & SEWING MACHINE CABINET MFG—Con.	
Companies ¹	97	Value added	\$1,000.. 142 913
All establishments	98	Total inventories, beginning of year	\$1,000.. 29 425
Establishments with 1 to 19 employees	69	Finished goods inventories, beginning of year	\$1,000.. 13 198
Establishments with 20 to 99 employees	19	Work-in-process inventories, beginning of year	\$1,000.. 5 768
Establishments with 100 employees or more	10	Materials and supplies inventories, beginning of year	\$1,000.. 10 459
All employees	3 764	Total inventories, end of year	\$1,000.. 26 876
Total compensation ²	95 115	Finished goods inventories, end of year	\$1,000.. 5 929
Annual payroll	74 632	Work-in-process inventories, end of year	\$1,000.. 7 849
Total fringe benefits	20 483	Materials and supplies inventories, end of year	\$1,000.. 13 098
Production workers, average for year	3 244	Gross book value of total assets at beginning of year	\$1,000.. 48 531
Production workers on March 15	3 367	Total capital expenditures (new and used)	\$1,000.. 4 818
Production workers on May 15	3 338	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 319
Production workers on August 15	3 122	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 4 499
Production workers on November 15	3 149	Total retirements ²	\$1,000.. 3 653
Production-worker hours	6 226	Gross book value of total assets at end of year	\$1,000.. 49 696
Production-worker wages	56 370	Total depreciation during year ²	\$1,000.. 3 113
Total cost of materials	150 138	Total rental payments ²	\$1,000.. 3 483
Cost of materials, parts, containers, etc., consumed	142 673	Buildings and other structures rental payments ²	\$1,000.. 2 369
Cost of resales	1 398	Machinery and equipment rental payments ²	\$1,000.. 1 114
Cost of fuels	992	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 746
Cost of purchased electricity	4 021	Response coverage ratio ⁴	percent.. 96
Cost of contract work	1 054	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 2 644
Quantity of electricity purchased for heat and power	59 926	Response coverage ratio ⁴	percent.. 96
Quantity of electricity generated less sold for heat and power	—	Cost of purchased communications services ³	\$1,000.. 224
Total value of shipments	298 239	Response coverage ratio ⁴	percent.. 96
Primary products value of shipments	268 959	Cost of purchased legal services ³	\$1,000.. 122
Secondary products value of shipments	26 971	Response coverage ratio ⁴	percent.. 96
Total miscellaneous receipts	2 309	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 101
Value of resales	2 058	Response coverage ratio ⁴	percent.. 96
Contract receipts	D	Cost of purchased advertising services ³	\$1,000.. 31
Other miscellaneous receipts	D	Response coverage ratio ⁴	percent.. 96
Primary products specialization ratio	percent.. 90	Cost of purchased software and other data processing services ³	\$1,000.. 320
Value of primary products shipments made in all industries	\$1,000.. 499 772	Response coverage ratio ⁴	percent.. 96
Value of primary products shipments made in this industry	\$1,000.. 268 959	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 746
Value of primary products shipments made in other industries	\$1,000.. 230 813	Response coverage ratio ⁴	percent.. 96
Coverage ratio	percent.. 53		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337129, WOOD TELEVISION, RADIO, & SEWING MACHINE CABINET MFG												
All establishments	-	98	29	3 764	74 632	3 244	6 226	56 370	142 913	150 138	298 239	4 818
Establishments with 1 to 4 employees	9	39	-	93	1 353	50	100	929	3 348	3 449	6 845	165
Establishments with 5 to 9 employees	7	18	-	118	2 414	88	181	1 593	5 151	4 896	10 144	212
Establishments with 10 to 19 employees	1	12	-	167	3 390	126	234	2 286	6 631	5 933	12 634	306
Establishments with 20 to 49 employees	1	14	14	440	8 581	377	658	5 992	20 733	17 093	37 814	1 387
Establishments with 50 to 99 employees	-	5	5	359	7 837	317	690	5 340	15 829	18 549	34 674	491
Establishments with 100 to 249 employees	-	6	6	912	16 658	797	1 264	13 003	27 580	30 810	62 855	D
Establishments with 250 to 499 employees	-	4	4	1 675	34 399	1 489	3 099	27 227	63 641	69 408	133 273	D
Establishments with 500 to 999 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	47	-	152	2 636	97	193	1 825	6 389	6 587	13 073	318

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337129	Wood television, radio, & sewing machine cabinet mfg	98	3 764	74 632	3 244	6 226	56 370	142 913	150 138	298 239	4 818

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337129	Wood television, radio, phonograph, and sewing machine cabinets	N	X	X	499 772	N	X	X	375 816
3371290	Wood television, radio, stereo, and sewing machine cabinets	N	X	X	499 772	N	X	X	375 816
33712901	Wood television cabinets and combinations (television, stereo, and radio)	N	X	X	374 125	N	X	X	N
3371290111	Wood television cabinets and combinations (television, stereo, and radio)	94	X	X	374 125	62	X	X	248 689
33712902	Wood audio cabinets, (including radio, stereo, phonograph), speaker cabinets, and wood sewing machine cabinets	N	X	X	104 989	N	X	X	N
3371290211	Wood audio cabinets, including radio, stereo, phonograph, and speaker cabinets	38	X	X	98 987	28	X	X	73 295
3371290221	Wood sewing machine cabinets	5	X	X	6 002	7	X	X	9 675
3371290Y	Wood television, radio, phonograph, and sewing machine cabinets, nsk	N	X	X	20 658	N	X	X	N
3371290YWW	Wood television, radio, phonograph, and sewing machine cabinets, nsk, for nonadministrative-record establishments	N	X	X	3 299	N	X	X	24 329
3371290YWY	Wood television, radio, phonograph, and sewing machine cabinets, nsk, for administrative-record establishments	N	X	X	17 359	N	X	X	19 828

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337129	WOOD TELEVISION, RADIO, & SEWING MACHINE CABINET MFG				
32100025	Hardwood lumber, rough and dressed	X	11 252	X	12 264
32100031	Softwood lumber, rough and dressed	X	D	X	D
32191203	Hardwood cut stock and dimension, excluding furniture frames	X	5 123	X	D
32121201	Softwood plywood	X	383	X	521
32121101	Hardwood plywood	X	2 009	X	5 979
32121105	Hardwood veneer	X	10 591	X	1 204
32121903	Particleboard (wood)	X	10 734	X	16 459
32121907	Medium density fiberboard (MDF)	X	16 861	X	7 874
32121909	Hardboard	X	643	X	D
33721500	Furniture frames, wood	X	D	X	D
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	6 024	X	4 904
32552001	Adhesives and sealants	X	1 307	X	1 271
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	D	X	D
32610017	Plastics parts, components, sheets, and other shapes (excluding plastics resins)	X	3 276	X	4 154
32721101	Flat glass (plate, float, and sheet)	X	1 054	X	1 675
32721503	Mirrors, framed and unframed	X	9	X	D
31320027	Fabrics, all types	X	177	X	1 519
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	11 592	X	13 369
32221001	Paperboard containers, boxes, and corrugated paperboard	X	13 598	X	13 715
00970099	All other materials and components, parts, containers, and supplies	X	12 102	X	7 138
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	32 155	X	24 728

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^p 10 to 19 percent estimated; ^q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337129 WOOD TELEVISION, RADIO, AND SEWING MACHINE CABINET MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing wood cabinets used as housings by television, stereo, loudspeaker, and sewing machine manufacturers.

The data published with NAICS code 337129 include the following SIC industry:

2517 Wood TV and radio cabinets

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
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1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYWW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Wood Office Furniture Manufacturing

1997

Issued September 1999

EC97M-3372A

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Wood Office Furniture Manufacturing

1997

Issued September 1999

EC97M-3372A

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337211	Wood office furniture mfg	640	676	30 621	780 935	24 583	50 357	539 299	1 774 992	1 323 412	3 109 092	111 016
252100	Wood office furniture	N	676	30 621	780 935	24 583	50 357	539 299	1 774 992	1 323 412	3 109 092	111 016

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337211, WOOD OFFICE FURNITURE MFG												
United States	1	676	259	30 621	780 935	24 583	50 357	539 299	1 774 992	1 323 412	3 109 092	111 016
Arizona	1	12	4	431	7 399	374	585	5 557	14 992	15 568	30 828	561
Arkansas	-	9	3	443	7 713	374	698	6 055	22 789	22 506	44 919	1 061
California	2	106	47	3 705	86 813	3 000	5 526	55 876	173 330	120 042	290 778	6 932
Florida	1	44	5	667	15 702	514	1 033	9 764	37 814	28 075	62 559	1 490
Georgia	1	18	6	802	22 623	679	1 480	15 391	54 705	28 539	82 708	2 623
Illinois	3	25	10	649	22 684	495	1 117	14 648	50 960	37 858	95 552	1 482
Indiana	-	32	22	5 113	132 970	4 342	9 482	102 593	307 380	245 193	551 833	16 912
Kentucky	-	8	4	974	24 760	846	1 893	19 399	64 718	56 335	120 668	2 044
Maryland	2	13	3	200	4 979	157	236	2 807	9 990	6 547	16 945	730
Michigan	-	35	16	1 984	58 155	1 528	3 217	40 545	147 308	88 941	237 095	7 789
Minnesota	3	24	9	721	18 616	543	1 186	12 105	35 249	37 745	74 363	1 890
Mississippi	2	8	5	331	6 273	291	528	5 028	9 600	12 069	22 011	216
Missouri	-	7	2	106	2 530	83	133	1 460	4 408	2 288	6 778	104
New Jersey	3	19	7	353	9 552	284	582	6 743	12 722	9 610	24 386	1 265
New York	2	37	13	1 636	50 951	1 186	2 631	28 596	94 235	56 738	152 147	4 282
North Carolina	-	51	32	5 942	131 835	4 738	9 558	91 424	262 529	213 902	477 910	22 096
Ohio	3	18	4	236	6 034	182	322	3 912	12 577	9 739	22 645	792
Pennsylvania	3	20	11	1 006	29 410	762	1 692	19 503	62 050	50 433	114 697	4 281
Tennessee	2	15	4	271	5 924	230	360	3 485	10 574	8 818	19 091	358
Washington	-	27	10	925	21 231	783	1 484	14 859	44 980	26 137	72 064	2 642
Wisconsin	2	18	10	615	16 606	493	1 004	11 221	38 045	22 597	61 029	1 312

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337211, WOOD OFFICE FURNITURE MFG		337211, WOOD OFFICE FURNITURE MFG—Con.	
Companies ¹	number.. 640	Value added	\$1,000.. 1 774 992
All establishments	number.. 676	Total inventories, beginning of year	\$1,000.. 333 316
Establishments with 1 to 19 employees	number.. 417	Finished goods inventories, beginning of year	\$1,000.. 77 190
Establishments with 20 to 99 employees	number.. 187	Work-in-process inventories, beginning of year	\$1,000.. 79 456
Establishments with 100 employees or more	number.. 72	Materials and supplies inventories, beginning of year	\$1,000.. 176 670
All employees	number.. 30 621	Total inventories, end of year	\$1,000.. 319 533
Total compensation ²	\$1,000.. 957 771	Finished goods inventories, end of year	\$1,000.. 71 501
Annual payroll	\$1,000.. 780 935	Work-in-process inventories, end of year	\$1,000.. 74 457
Total fringe benefits	\$1,000.. 176 836	Materials and supplies inventories, end of year	\$1,000.. 173 575
Production workers, average for year	number.. 24 583	Gross book value of total assets at beginning of year	\$1,000.. 974 697
Production workers on March 12	number.. 23 964	Total capital expenditures (new and used)	\$1,000.. 111 016
Production workers on May 12	number.. 24 278	Capital expenditures for buildings and other structures	
Production workers on August 12	number.. 24 834	(new and used)	\$1,000.. 29 435
Production workers on November 12	number.. 25 256	Capital expenditures for machinery and equipment (new	
Production-worker hours	1,000.. 50 357	and used)	\$1,000.. 81 581
Production-worker wages	\$1,000.. 539 299	Total retirements ²	\$1,000.. 18 441
Total cost of materials	\$1,000.. 1 323 412	Gross book value of total assets at end of year	\$1,000.. 1 067 272
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 219 968	Total depreciation during year ²	\$1,000.. 66 879
Cost of resales	\$1,000.. 39 208	Total rental payments ²	\$1,000.. 53 935
Cost of fuels	\$1,000.. 10 275	Buildings and other structures rental payments ²	\$1,000.. 32 938
Cost of purchased electricity	\$1,000.. 31 927	Machinery and equipment rental payments ²	\$1,000.. 20 997
Cost of contract work	\$1,000.. 22 034	Cost of purchased services for the repair of buildings and other	
Quantity of electricity purchased for heat and power	1,000 kWh.. 500 955	structures ³	\$1,000.. 7 094
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Response coverage ratio ⁴	percent.. 79
Total value of shipments	\$1,000.. 3 109 092	Cost of purchased services for the repair of machinery and	
Primary products value of shipments	\$1,000.. 2 808 673	equipment ³	\$1,000.. 18 216
Secondary products value of shipments	\$1,000.. 233 941	Response coverage ratio ⁴	percent.. 79
Total miscellaneous receipts	\$1,000.. 66 478	Cost of purchased communications services ³	\$1,000.. 6 374
Value of resales	\$1,000.. 53 398	Response coverage ratio ⁴	percent.. 79
Contract receipts	\$1,000.. 4 416	Cost of purchased legal services ³	\$1,000.. 3 065
Other miscellaneous receipts	\$1,000.. 8 664	Response coverage ratio ⁴	percent.. 79
Primary products specialization ratio	percent.. 92	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 6 502
Value of primary products shipments made in all industries	\$1,000.. 3 145 988	Response coverage ratio ⁴	percent.. 79
Value of primary products shipments made in this industry	\$1,000.. 2 808 673	Cost of purchased advertising services ³	\$1,000.. 21 390
Value of primary products shipments made in other		Response coverage ratio ⁴	percent.. 79
industries	\$1,000.. 337 315	Cost of purchased software and other data processing	
Coverage ratio	percent.. 89	services ³	\$1,000.. 5 574
		Response coverage ratio ⁴	percent.. 79
		Cost of purchased refuse removal (including hazardous waste)	
		services ³	\$1,000.. 5 492
		Response coverage ratio ⁴	percent.. 79

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337211, WOOD OFFICE FURNITURE MFG												
All establishments	1	676	259	30 621	780 935	24 583	50 357	539 299	1 774 992	1 323 412	3 109 092	111 016
Establishments with 1 to 4 employees	8	211	—	468	9 153	388	601	6 604	15 841	13 605	31 236	1 093
Establishments with 5 to 9 employees	6	116	—	771	15 407	610	1 001	10 778	25 483	20 766	48 588	1 331
Establishments with 10 to 19 employees	2	90	—	1 295	28 814	1 009	1 817	19 633	51 434	44 241	97 224	2 689
Establishments with 20 to 49 employees	2	107	107	3 428	87 558	2 692	5 127	57 660	181 847	129 803	311 569	8 691
Establishments with 50 to 99 employees	2	79	79	5 503	137 860	4 322	7 940	86 252	287 407	217 323	509 178	10 296
Establishments with 100 to 249 employees	1	48	48	7 679	197 897	6 095	13 172	135 217	443 746	338 735	785 822	33 969
Establishments with 250 to 499 employees	—	17	17	6 162	169 326	5 282	11 055	129 084	470 899	316 548	783 585	35 000
Establishments with 500 to 999 employees	—	8	8	5 315	134 920	4 185	9 644	94 071	298 335	242 391	541 890	17 947
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	249	—	927	16 476	756	1 111	11 802	26 632	24 440	54 364	1 716

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337211	Wood office furniture mfg.	676	30 621	780 935	24 583	50 357	539 299	1 774 992	1 323 412	3 109 092	111 016
3372111	Wood office seating, including upholstered	68	6 185	161 886	5 045	9 636	105 891	385 442	276 818	661 418	23 865
3372114	Wood office desks and extensions	60	7 027	170 287	5 800	11 956	126 326	354 240	298 377	651 807	22 623
3372117	Wood office storage units, files, and tables	75	5 273	137 123	4 242	9 376	94 755	315 585	196 824	505 739	17 028
337211A	Wood office panel, modular and desking systems furniture, and all other wood office furniture, nec.	61	5 623	160 491	4 341	9 724	109 577	450 120	327 268	778 866	32 982

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337211	Wood office furniture	N	X	X	3 145 988	N	X	X	1 902 029
3372111	Wood office seating, including upholstered	N	X	X	652 851	N	X	X	N
33721111	Wood office seating, including upholstered	N	X	X	629 713	N	X	X	N
337211111	Wood office seating, including upholstered, secretarial chairs	19	X	86.7	29 243	N	X	N	N
337211112	Wood office seating, including upholstered, general office and desk chairs	52	X	P1 605.0	336 426	N	X	N	N
337211113	Wood office seating, including upholstered, side and arm chairs	50	X	688.8	146 724	N	X	N	N
337211114	Wood office seating, including upholstered, lounge seating	38	X	X	68 994	N	X	X	N
337211115	Wood office seating, including upholstered, stacking chairs	13	X	S	22 292	N	X	N	N
337211116	Wood office seating, including upholstered, all other office-type seating	18	X	X	26 034	N	X	X	N
3372111Y	Wood office seating, including upholstered, nsk	N	X	X	23 138	N	X	X	N
3372111YWV	Wood office seating, including upholstered, nsk	N	X	X	23 138	N	X	X	N
3372114	Wood office desks and extensions	N	X	X	584 623	N	X	X	N
33721141	Wood office desks and extensions	N	X	X	580 416	N	X	X	N
337211411	Wood office desks	106	X	153.4	487 364	N	X	N	N
337211412	Wood office desk extensions	39	X	X	93 052	N	X	X	N
3372114Y	Wood office desks and extensions, nsk	N	X	X	4 207	N	X	X	N
3372114YWV	Wood office desks and extensions, nsk	N	X	X	4 207	N	X	X	N
3372117	Wood office storage units, files, and tables	N	X	X	627 790	N	X	X	N
33721171	Wood office credenzas	N	X	X	99 653	N	X	X	N
337211711	Wood office credenzas	72	X	162.0	99 653	N	X	N	N
33721172	Wood office bookcases and other storage units, except credenzas	N	X	X	125 197	N	X	X	N
337211721	Wood office bookcases and other storage units, except credenzas	80	X	X	125 197	N	X	X	N
33721173	Wood office files, vertical, horizontal, and other, and wood office tables	N	X	X	383 013	N	X	X	N
337211731	Wood office files, vertical, letter and legal	32	X	99.4	51 550	N	X	N	N
337211732	Wood office files, horizontal-lateral, letter and legal	36	X	300.6	63 968	N	X	N	N
337211733	Wood office files, all other	16	X	X	22 859	N	X	X	N
337211734	Wood office work and conference tables	95	X	P514.6	186 008	N	X	N	N
337211735	Wood office equipment support tables	22	X	72.6	15 975	N	X	N	N
337211736	Other wood office tables, except work, conference, and equipment supporting	41	X	X	42 653	N	X	X	N
3372117Y	Wood office storage units, files, and tables, nsk	N	X	X	19 927	N	X	X	N
3372117YWV	Wood office storage units, files, and tables, nsk	N	X	X	19 927	N	X	X	N
337211A	Wood office panel, modular and desk systems furniture, and all other wood office furniture, nec	N	X	X	721 630	N	X	X	N
337211A1	Wood panel, modular, and desk systems and accessories	N	X	X	718 518	N	X	X	N
337211A11	Wood panel systems and components	41	X	X	306 509	N	X	X	N
337211A12	Wood modular systems and accessories	27	X	X	136 615	N	X	X	N
337211A13	Wood desk systems and accessories	31	X	X	146 076	N	X	X	N
337211A14	All other wood office furniture, nec	43	X	X	129 318	N	X	X	N
337211AY	Wood office panel, modular, and desk systems furniture and all other wood furniture, nec, nsk	N	X	X	3 112	N	X	X	N
337211AYWV	Wood office panel, modular, and desk systems furniture and all other wood furniture, nec, nsk	N	X	X	3 112	N	X	X	N
337211W	Wood office furniture, nsk, total	N	X	X	559 094	N	X	X	N
337211WY	Wood office furniture, nsk	N	X	X	559 094	N	X	X	N
337211WYWV	Wood office furniture, nsk, for nonadministrative-record establishments	N	X	X	503 474	N	X	X	N
337211WYWV	Wood office furniture, nsk, for administrative-record establishments	N	X	X	55 620	N	X	X	51 652

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3372111	WOOD OFFICE SEATING, INCLUDING UPHOLSTERED		
	United States	652 851	N
	Arkansas	11 734	N
	California	44 836	N
	Florida	8 309	N
	Indiana	112 242	N
	Michigan	49 968	N
	New York	27 623	N
	North Carolina	147 768	N
	Pennsylvania	43 617	N
	Texas	79 425	N
	3372114	WOOD OFFICE DESKS AND EXTENSIONS	
United States		584 623	N
California		32 717	N
Florida		4 100	N
Illinois		36 398	N
Indiana		190 907	N
Michigan		8 329	N
New Jersey		3 564	N
New York		14 138	N
North Carolina		103 570	N
Pennsylvania		7 564	N
Texas		6 749	N
Washington	16 509	N	
3372117	WOOD OFFICE STORAGE UNITS, FILES, AND TABLES		
	United States	627 790	N
	Arizona	5 450	N
	California	57 486	N
	Florida	32 685	N
	Georgia	6 516	N
	Illinois	14 427	N
	Indiana	122 689	N
	Michigan	59 938	N
	Minnesota	11 097	N
	Missouri	4 852	N
	New Jersey	3 641	N
New York	27 622	N	
North Carolina	85 039	N	
Pennsylvania	13 479	N	
Washington	22 340	N	
Wisconsin	31 828	N	
337211A	WOOD OFFICE PANEL, MODULAR AND DESKING SYSTEMS FURNITURE, AND ALL OTHER WOOD OFFICE FURNITURE, NEC		
	United States	721 630	N
	California	68 314	N
	Georgia	61 712	N
	Illinois	2 930	N
	Kentucky	9 957	N
	Michigan	150 625	N
	Minnesota	22 392	N
	New York	26 598	N
	North Carolina	45 211	N
	Pennsylvania	18 133	N
	Washington	18 736	N
Wisconsin	17 960	N	

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337211	WOOD OFFICE FURNITURE MFG				
332000AC	Metal stampings	X	7 982	X	4 094
33200043	All other fabricated metal products (except castings and forgings)	X	9 918	X	9 864
33210001	Forgings	X	-	X	184
33100035	Castings (rough and semifinished)	X	2 213	X	350
33120017	Steel sheet and strip, including tin plate	X	27 298	X	4 035
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	23 684	X	4 983
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	962	X	Z
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	850
33100077	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	D
32100025	Hardwood lumber, rough and dressed	X	60 421	X	53 315
32100031	Softwood lumber, rough and dressed	X	3 705	X	5 263
00190097	Hardwood dimension and parts, including wood furniture frames	X	91 838	X	51 347
32121105	Hardwood veneer	X	36 168	X	33 544
32121101	Hardwood plywood	X	77 312	X	41 240
32121201	Softwood plywood	X	2 911	X	D
32121903	Particleboard (wood)	X	117 769	X	45 845
32121907	Medium density fiberboard (MDF)	X	24 584	X	5 850
32121909	Hardboard	X	29 223	X	8 542
32613001	Plastics laminated sheets	X	41 135	X	26 566
32619909	Plastics furniture parts and components	X	32 873	X	8 908
32615000	Formed and slab stock for pillows, cushions, seating, etc. (urethane)	X	15 113	X	8 674
31332007	Coated or laminated fabrics, including vinyl coated	X	31 797	X	13 407
31321019	Uncoated broadwoven fabrics for upholstery	X	30 429	X	22 991
32721101	Flat glass (plate, float, and sheet)	X	1 200	X	1 233
32552001	Adhesives and sealants	X	7 416	X	3 123
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	34 070	X	17 163
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	101 676	X	60 258
32221001	Paperboard containers, boxes, and corrugated paperboard	X	56 883	X	26 930
00970099	All other materials and components, parts, containers, and supplies	X	119 081	X	60 645
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	228 730	X	174 398

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337211 WOOD OFFICE FURNITURE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing wood office-type furniture. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337211 include the following SIC industry:

2521 Wood office furniture

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3952000 pt	3952000 pt
337110WYVW pt	5712000 pt	2434002	337122WYVW pt	2511002	2511002	337127WYVW pt	3999000 pt	3999000 pt
337110WYVW pt	2434002	2434002	337122WYVW pt	5712002 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2541002 pt	2541002 pt	33712241	25145	25145	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	5712002 pt	5712000 pt	337124111	2514512	2514512	337127WYVW pt	3952002 pt	3952002 pt
3371211 pt	25120 pt	25120 pt	3371241121	2514513	2514513	337127WYVW pt	3999002 pt	3999002 pt
3371211 pt	57121 pt	57120 pt	3371241131	2514515	2514515	3371290	25170	25170
3371211111	2512012	2512012	3371241141	2514517	2514517	3371290111	2517015	2517015
3371211211	2512041	2512041	3371241151	2514521	2514521	3371290211	2517018	2517018
3371211311	2512045	2512045	3371241161	2514527	2514527	3371290221	2517021	2517021
3371211411	2512054	2512054	3371241171	2514597	2514597	3371290YVW	2517000	2517000
3371211511	2512031	2512031	3371241YVW	2514500	2514500	3371290YVW	2517002	2517002
3371211521	2512035	2512035	3371244	25146	25146	3372111	25212	25210 pt
3371211531 pt	2512098	2512098	3371244111	2514612	2514612	3372111111	2521211	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244121	2514614	2514614	3372111121	2521213	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371244221	2514622	2514622	3372111131	2521214	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371244231	2514624	2514624	3372111141	2521217	2521000 pt
3371214	25155	25155	3371244241	2514698	2514698	3372111151	2521219	2521000 pt
3371214100	2515500	2515500	3371244YVW	2514600	2514600	3372111161	2521221	2521000 pt
337121W pt	25120 pt	25120 pt	3371247	25147	25147	3372111YVW	2521200	2521000 pt
337121W pt	25150 pt	25150 pt	3371247111	2514733	2514733	3372114	25213	25210 pt
337121W pt	57120 pt	57120 pt	3371247121	2514737	2514737	3372114111	2521311	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247211	2514775	2514775	3372114121	2521313	2521000 pt
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3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Custom Architectural Woodwork and Millwork Manufacturing

1997

Issued August 1999

EC97M-3372B

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Custom Architectural Woodwork and Millwork Manufacturing

1997

Issued August 1999

EC97M-3372B

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337212	Custom architectural	1 090	1 100	24 173	709 383	17 255	32 460	425 117	1 328 760	838 140	2 168 814	55 039
254120	Wood partitions & fixtures (pt)	N	1 100	24 173	709 383	17 255	32 460	425 117	1 328 760	838 140	2 168 814	55 039

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
337212, CUSTOM ARCHITECTURAL WOODWORK & MILLWORK MFG												
United States	1	1 100	368	24 173	709 383	17 255	32 460	425 117	1 328 760	838 140	2 168 814	55 039
Arizona	1	24	7	506	9 478	319	415	5 068	16 036	9 207	25 541	1 771
California	1	117	37	2 589	77 428	1 849	3 155	45 920	140 493	71 501	214 050	3 764
Colorado	1	25	11	488	14 191	324	616	7 866	21 480	15 521	37 088	860
Connecticut	—	27	9	431	16 175	313	585	9 401	29 787	20 771	50 401	1 188
Florida	2	43	11	1 178	28 284	780	1 536	16 789	50 339	35 446	85 239	2 876
Georgia	3	30	7	459	11 972	375	706	8 088	22 283	13 471	35 918	650
Illinois	1	44	9	615	23 087	421	853	14 041	41 355	27 170	68 226	2 938
Indiana	—	25	10	653	20 542	497	963	12 583	33 499	21 760	55 095	1 093
Kansas	—	11	3	215	5 211	154	260	2 675	10 729	9 938	20 850	271
Maryland	—	18	6	320	10 974	246	442	7 411	17 940	9 261	27 133	1 445
Massachusetts	1	29	10	623	21 526	437	879	11 875	37 658	24 542	62 545	915
Michigan	4	33	9	760	25 006	369	712	9 395	43 646	30 357	70 758	1 500
Minnesota	1	35	15	827	25 301	602	1 295	16 296	46 063	35 803	81 951	2 060
Mississippi	—	6	4	117	2 527	87	188	1 805	4 627	2 568	7 251	73
Missouri	1	25	10	409	13 110	320	630	8 833	22 379	12 976	35 587	682
Nevada	—	13	7	432	15 678	306	593	10 437	30 914	16 824	47 710	1 240
New Jersey	1	34	10	576	23 167	416	822	14 020	46 010	25 574	73 228	1 447
New York	1	74	19	1 225	39 405	879	1 666	25 129	69 441	43 947	111 198	2 714
North Carolina	1	30	5	398	10 148	306	620	6 742	17 550	13 070	30 843	1 153
Ohio	—	34	14	637	18 682	453	923	11 452	31 048	26 529	58 033	1 876
Oklahoma	—	10	6	1 167	28 818	787	1 481	19 237	66 790	30 672	95 967	2 439
Pennsylvania	1	61	20	1 356	42 886	945	1 865	24 475	83 960	59 556	144 124	3 992
South Carolina	—	12	4	378	10 573	260	386	4 414	24 498	11 337	36 029	988
Tennessee	—	24	13	629	16 357	451	870	10 206	30 703	30 304	61 239	925
Utah	2	19	7	415	9 707	352	646	7 215	17 989	18 840	37 277	1 174
Virginia	1	32	11	805	22 533	582	1 088	13 223	49 439	24 178	74 503	1 100
Washington	—	29	12	496	17 050	386	758	10 176	28 888	16 444	45 324	1 064
Wisconsin	—	31	10	553	16 243	414	863	10 108	36 151	23 116	59 349	1 172

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337212, CUSTOM ARCHITECTURAL WOODWORK & MILLWORK MFG		337212, CUSTOM ARCHITECTURAL WOODWORK & MILLWORK MFG—Con.	
Companies ¹	number.. 1 090	Value added	\$1,000.. 1 328 760
All establishments	number.. 1 100	Total inventories, beginning of year	\$1,000.. 199 546
Establishments with 1 to 19 employees	number.. 732	Finished goods inventories, beginning of year	\$1,000.. 58 180
Establishments with 20 to 99 employees	number.. 329	Work-in-process inventories, beginning of year	\$1,000.. 64 586
Establishments with 100 employees or more	number.. 39	Materials and supplies inventories, beginning of year	\$1,000.. 76 780
All employees	number.. 24 173	Total inventories, end of year	\$1,000.. 204 112
Total compensation ²	\$1,000.. 861 619	Finished goods inventories, end of year	\$1,000.. 53 929
Annual payroll	\$1,000.. 709 383	Work-in-process inventories, end of year	\$1,000.. 66 923
Total fringe benefits	\$1,000.. 152 236	Materials and supplies inventories, end of year	\$1,000.. 83 260
Production workers, average for year	number.. 17 255	Gross book value of total assets at beginning of year	\$1,000.. 448 337
Production workers on March 12	number.. 16 947	Total capital expenditures (new and used)	\$1,000.. 55 039
Production workers on May 12	number.. 17 070	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 13 307
Production workers on August 12	number.. 17 550	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 41 732
Production workers on November 12	number.. 17 453	Total retirements ²	\$1,000.. 8 949
Production-worker hours	1,000.. 32 460	Gross book value of total assets at end of year	\$1,000.. 494 427
Production-worker wages	\$1,000.. 425 117	Total depreciation during year ²	\$1,000.. 37 237
Total cost of materials	\$1,000.. 838 140	Total rental payments ²	\$1,000.. 53 779
Cost of materials, parts, containers, etc., consumed	\$1,000.. 654 096	Buildings and other structures rental payments ²	\$1,000.. 28 357
Cost of resales	\$1,000.. 76 471	Machinery and equipment rental payments ²	\$1,000.. 25 422
Cost of fuels	\$1,000.. 6 681	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 5 279
Cost of purchased electricity	\$1,000.. 14 622	Response coverage ratio ⁴	percent.. 76
Cost of contract work	\$1,000.. 86 270	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 4 174
Quantity of electricity purchased for heat and power	1,000 kWh.. 223 106	Response coverage ratio ⁴	percent.. 76
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 4 656
Total value of shipments	\$1,000.. 2 168 814	Response coverage ratio ⁴	percent.. 76
Primary products value of shipments	\$1,000.. 1 880 207	Cost of purchased legal services ³	\$1,000.. 2 499
Secondary products value of shipments	\$1,000.. 132 140	Response coverage ratio ⁴	percent.. 76
Total miscellaneous receipts	\$1,000.. 156 467	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 295
Value of resales	\$1,000.. 103 963	Response coverage ratio ⁴	percent.. 76
Contract receipts	\$1,000.. 13 021	Cost of purchased advertising services ³	\$1,000.. 4 328
Other miscellaneous receipts	\$1,000.. 39 483	Response coverage ratio ⁴	percent.. 76
Primary products specialization ratio	percent.. 93	Cost of purchased software and other data processing services ³	\$1,000.. 2 607
Value of primary products shipments made in all industries	\$1,000.. 2 045 137	Response coverage ratio ⁴	percent.. 76
Value of primary products shipments made in this industry	\$1,000.. 1 880 207	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 2 425
Value of primary products shipments made in other industries	\$1,000.. 164 930	Response coverage ratio ⁴	percent.. 76
Coverage ratio	percent.. 91		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337212, CUSTOM ARCHITECTURAL WOODWORK & MILLWORK MFG												
All establishments	1	1 100	368	24 173	709 383	17 255	32 460	425 117	1 328 760	838 140	2 168 814	55 039
Establishments with 1 to 4 employees	6	293	—	593	13 482	492	694	8 393	23 774	18 430	42 404	1 179
Establishments with 5 to 9 employees	2	214	—	1 438	38 239	1 075	1 807	24 341	70 491	53 855	123 361	3 762
Establishments with 10 to 19 employees	1	225	—	3 138	87 613	2 347	4 270	55 687	169 722	97 547	269 718	6 551
Establishments with 20 to 49 employees	—	258	258	7 684	234 955	5 614	10 996	139 717	414 043	282 617	698 901	17 878
Establishments with 50 to 99 employees	1	71	71	4 831	158 582	3 407	6 744	94 423	296 902	177 525	474 605	12 178
Establishments with 100 to 249 employees	—	35	35	4 924	136 780	3 273	5 983	77 514	261 852	165 054	425 211	8 945
Establishments with 250 to 499 employees	—	3	3	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	8	267	—	879	18 728	688	931	11 375	38 507	25 072	63 722	1 756

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337212	Custom architectural woodwork & millwork mfg	1 100	24 173	709 383	17 255	32 460	425 117	1 328 760	838 140	2 168 814	55 039

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337212	Custom architectural woodwork, millwork, and fixtures	N	X	X	2 045 137	N	X	X	N
3372120	Custom architectural woodwork, millwork, and fixtures	N	X	X	2 045 137	N	X	X	N
33721201	Custom architectural woodwork, millwork, and fixtures	N	X	X	1 895 960	N	X	X	N
3372120100	Custom architectural woodwork, millwork, and fixtures	924	X	X	1 895 960	N	X	X	N
3372120Y	Custom architectural woodwork, millwork, and fixtures, nsk	N	X	X	149 177	N	X	X	N
3372120YWW	Custom architectural woodwork, millwork, and fixtures, nsk, for nonadministrative-record establishments	N	X	X	88 906	N	X	X	N
3372120YWY	Custom architectural woodwork, millwork, and fixtures, nsk, for administrative-record establishments	N	X	X	60 271	N	X	X	N

Additional information is available for this item: see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; a 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337212	CUSTOM ARCHITECTURAL WOODWORK & MILLWORK MFG				
332000AC	Metal stampings	X	648	X	N
33200043	All other fabricated metal products (except castings and forgings)	X	9 184	X	N
33210001	Forgings	X	D	X	N
33100035	Castings (rough and semifinished)	X	D	X	N
33120017	Steel sheet and strip, including tin plate	X	2 135	X	N
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	2 219	X	N
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	309	X	N
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	4 538	X	N
33100077	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	662	X	N
32100025	Hardwood lumber, rough and dressed	X	69 869	X	N
32100031	Softwood lumber, rough and dressed	X	7 745	X	N
00190097	Hardwood dimension and parts, including wood furniture frames	X	5 912	X	N
32121105	Hardwood veneer	X	16 828	X	N
32121101	Hardwood plywood	X	42 079	X	N
32121201	Softwood plywood	X	8 368	X	N
32121903	Particleboard (wood)	X	43 681	X	N
32121907	Medium density fiberboard (MDF)	X	28 866	X	N
32121909	Hardboard	X	5 244	X	N
32613001	Plastics laminated sheets	X	35 057	X	N
32619909	Plastics furniture parts and components	X	9 125	X	N
32615000	Formed and slab stock for pillows, cushions, seating, etc. (urethane)	X	1 004	X	N
31332007	Coated or laminated fabrics, including vinyl coated	X	3 150	X	N
31321019	Uncoated broadwoven fabrics for upholstery	X	2 218	X	N
32721101	Flat glass (plate, float, and sheet)	X	11 965	X	N
32552001	Adhesives and sealants	X	3 962	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	10 821	X	N
32351001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	32 530	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	5 696	X	N
00970099	All other materials and components, parts, containers, and supplies	X	117 324	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	172 672	X	N

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^p 10 to 19 percent estimated; ^q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337212 CUSTOM ARCHITECTURAL WOODWORK AND MILLWORK MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing custom designed interiors consisting of architectural woodwork and fixtures utilizing wood, wood products, and plastics laminates. All of the industry output is made to individual order on a job shop basis and requires skilled craftsmen as a labor input. A job

might include custom manufacturing of display fixtures, gondolas, wall shelving units, entrance and window architectural detail, sales and reception counters, wall paneling, and matching furniture.

The data published with NAICS code 337212 include the following SIC industry:

2541 Wood partitions and fixtures (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127W pt	39990 pt	39990 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	2599000 pt	2599000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	57120 pt	57120 pt	337122WYVW pt	2511000	2511000	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	2511002	2511002	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	5712000 pt	5712000 pt	337122WYVW pt	5712002 pt	5712000 pt	337127WYVW pt	3999002 pt	3999002 pt
337110WYVW pt	2434002	2434002	33712241	25145	25145	3371290	25170	25170
337110WYVW pt	2541002 pt	2541002 pt	3371224111	2514512	2514512	3371290111	2517015	2517015
337110WYVW pt	5712002 pt	5712000 pt	33712241121	2514513	2514513	3371290211	2517018	2517018
3371211	25120 pt	25120 pt	33712241131	2514515	2514515	3371290221	2517021	2517021
3371211 pt	57121 pt	57120 pt	33712241141	2514517	2514517	3371290YVW	2517000	2517000
3371211111	2512012	2512012	33712241151	2514521	2514521	3371290YVW	2517002	2517002
3371211121	2512041	2512041	33712241161	2514527	2514527	3372111	25212	25210 pt
3371211311	2512045	2512045	33712241171	2514597	2514597	3372111111	2521211	2521000 pt
3371211411	2512054	2512054	33712241YVW	2514500	2514500	3372111121	2521213	2521000 pt
3371211511	2512031	2512031	3371224	25146	25146	3372111131	2521214	2521000 pt
3371211521	2512035	2512035	33712244111	2514612	2514612	3372111141	2521217	2521000 pt
3371211531 pt	2512098	2512098	33712244221	2514622	2514622	3372111151	2521219	2521000 pt
3371211531 pt	5712121	5712000 pt	33712244231	2514624	2514624	3372111161	2521221	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	33712244241	2514698	2514698	3372111YVW	2521200	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	33712244YVW	2514600	2514600	3372114	25213	25210 pt
3371214	25155	25155	33712247	25147	25147	3372114111	2521311	2521000 pt
3371214100	2515500	2515500	3371224711	2514733	2514733	3372114121	2521313	2521000 pt
337121W pt	25120 pt	25120 pt	33712247121	2514737	2514737	3372114YVW	2521300	2521000 pt
337121W pt	25150 pt	25150 pt	3371224721	2514775	2514775	3372117	25214	25210 pt
337121W pt	57120 pt	57120 pt	33712247221	2514782	2514782	3372117111	2521411	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	33712247231	2514783	2514783	3372117211	2521413	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	33712247241	2514788	2514788	3372117311	2521415	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	33712247291 pt	2514789 pt	2514771	3372117321	2521417	2521000 pt
337121WYVW pt	2512002	2512002	33712247291 pt	2514789 pt	2514798	3372117331	2521419	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	33712247YVW	2514700	2514700	3372117341	2521425	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	3371224W	25140	25140	3372117351	2521427	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371224WYVW	2514000	2514000	3372117361	2521429	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371224WYVW	2514002	2514002	3372117YVW	2521400	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	337211A	25217	25210 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	337211A111	2521711	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	337211A121	2521713	2521000 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A131	2521715	2521000 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A141	2521719	2521000 pt
3371221231	2511271	2511271	3371250321	2519098	2519098	337211AYVW	2521700	2521000 pt
3371221241	2511281	2511281	3371250YVW	2519000	2519000	337211W	25210	25210 pt
3371221311	2511233	2511233	3371250YVW	2519002	2519002	337211WYVW	2521000	2521000 pt
3371221321	2511235	2511235	3371271	25311 pt	25311 pt	337211WYVW	2521002	2521002
3371221391	2511291	2511291	3371271111	2531131	2531131	3372120 pt	25410 pt	25410 pt
3371221395 pt	2511298	2511298	3371271121	2531136	2531136	3372120 pt	25417 pt	25411 pt
3371221395 pt	5712111	5712000 pt	3371271211	2531137	2531137	3372120 pt	25417 pt	25413 pt
3371221YVW pt	2511200	2511200	3371271221	2531192	2531198 pt	3372120100 pt	2541700 pt	2541111 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271YVW	2531100 pt	2531100 pt	3372120100 pt	2541700 pt	2541121 pt
3371224	25113	25113	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541131 pt
3371224111	2511311	2511311	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541200 pt
3371224211	2511331	2511331	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541332
3371224311	2511351	2511351	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541333
3371224321	2511371	2511371	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541334
3371224391	2511391	2511391	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541338 pt
3371224395	2511399	2511399	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541339 pt
3371224YVW	2511300	2511300	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541341 pt
3371227	25115	25115	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541361 pt
3371227111	2511511	2511511	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227121	2511513	2511513	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227131	2511515	2511515	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227141	2511517	2511517	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227211	2511521	2511521	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
3371227311	2511535	2511535	3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWW pt	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWW pt	2541000 pt	2541000 pt
3372141121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWW pt	2542000	2542000
3372141211	2522114	2522100 pt	3372157	25421	25421	337215WYWW pt	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157111	2542113	2542113	337215WYWW pt	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157121	2542117	2542117	337215WYWW pt	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157131	2542119	2542119	337215WYWW pt	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157YVW	2542100	2542100	337215WYWW pt	3499002 pt	3499002 pt
3372144	25225	25225	337215A	25422	25422	3379101	25151	25151
3372144111	2522511	2522500 pt	337215A111	2542233	2542233	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
3372147311	2522619	2522600 pt	337215E111	2542341	2542341	3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E121	2542343	2542343	3379107	25153	25153
3372147421	2522613	2522600 pt	337215E131	2542345	2542345	3379107111	2515315	2515315
3372147431	2522625	2522600 pt	337215E141	2542347	2542347	3379107121	2515317	2515317
3372147441	2522627	2522600 pt	337215E151	2542349	2542349	3379107131	2515319	2515319
3372147451	2522629	2522600 pt	337215EYVW	2542300	2542300	3379107YVW	2515300	2515300
3372147YVW	2522600	2522600 pt	337215H pt	25424	25424	337910A	25156	25156
337214A	25227	25227	337215H111 pt	34998 pt	34998 pt	337910A111	2515613	2515613
337214A111	2522711	2522700 pt	337215H111 pt	2542461 pt	2542463	337910A121	2515619	2515619
337214A211	2522713	2522700 pt	337215H211 pt	2542461 pt	2542467 pt	337910AYVW	2515600	2515600
337214A221	2522715	2522700 pt	337215H211 pt	2542464 pt	2542465	337910W	25150 pt	25150 pt
337214A231	2522719	2522700 pt	337215H311	2542469	2542469	337910WYWW	2515000 pt	2515000 pt
337214AYVW	2522700	2522700 pt	337215H321	2542471	2542471	337910WYVW	2515002 pt	2515002 pt
337214W	25220	25220	337215H331	2542499	2542499	3379201	25913	25913
337214WYWW	2522000	2522000	337215H341	3499896	3499899 pt	3379201111	2591311	2591311
337214WYVW	2522002	2522002	337215H351	3499897	3499899 pt	3379201121	2591313	2591313
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201131	2591315	2591315
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201YVW	2591300	2591300
3372151121	2541415	2541121 pt	337215K	24266	24266	3379204	25914	25914
3372151131	2541419	2541131 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
3372151YVW	2541400	2541100 pt	337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335	337215W pt	24260 pt	24260 pt	3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
3372154121 pt	2541613 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207YVW	2591500	2591500
3372154131 pt	2541615 pt	2541338 pt	337215W pt	25410 pt	25410 pt	337920W	25910	25910
3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYWW	2591000	2591000
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Office Furniture (Except Wood) Manufacturing

1997

Issued September 1999

EC97M-3372C

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Office Furniture (Except Wood) Manufacturing

1997

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EC97M-3372C

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337214	Office furniture (except wood) mfg	301	358	44 218	1 621 034	32 371	69 212	979 176	4 954 085	3 259 031	8 230 332	321 493
252200	Office furniture, except wood ..	N	358	44 218	1 621 034	32 371	69 212	979 176	4 954 085	3 259 031	8 230 332	321 493

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337214, OFFICE FURNITURE (EXCEPT WOOD) MFG												
United States	-	358	180	44 218	1 621 034	32 371	69 212	979 176	4 954 085	3 259 031	8 230 332	321 493
Alabama	-	7	5	1 536	52 442	1 204	2 547	39 743	181 712	108 619	292 757	4 300
California	1	68	37	4 192	121 845	3 077	6 637	91 014	443 839	235 953	679 966	12 819
Florida	3	23	5	483	11 030	365	599	6 663	26 166	22 140	48 693	1 233
Georgia	-	12	6	1 137	39 545	971	2 376	34 094	191 893	126 888	319 882	6 437
Illinois	2	12	7	1 210	44 831	866	1 869	20 967	105 855	65 942	172 499	5 643
Indiana	3	12	8	595	14 441	461	825	9 527	46 219	34 652	81 150	5 484
Michigan	-	26	21	18 858	854 314	13 221	28 780	473 205	2 524 838	1 457 625	3 983 253	192 564
Minnesota	-	10	6	411	12 980	257	573	6 542	30 639	28 723	59 536	1 279
Mississippi	1	6	4	1 365	34 536	1 218	3 200	30 211	109 962	98 907	208 524	3 197
Missouri	-	5	2	208	6 750	169	280	4 955	3 517	13 148	26 432	105
New Jersey	1	11	1	279	6 743	211	356	4 470	18 933	19 396	38 504	1 064
New York	2	25	7	814	21 670	613	1 296	12 722	49 624	39 841	89 467	5 605
North Carolina	2	16	7	863	18 362	709	1 268	11 994	90 276	51 401	140 927	1 620
Ohio	-	5	2	278	5 978	224	293	4 234	13 787	10 939	24 906	706
Pennsylvania	1	17	10	2 307	79 669	1 633	3 445	49 858	297 305	193 497	490 055	18 764
Tennessee	1	14	9	1 892	44 447	1 331	2 254	24 356	95 494	141 025	242 100	6 739
Texas	1	17	6	898	22 808	644	1 318	14 942	73 011	67 514	140 032	5 498
Washington	1	7	3	267	8 897	183	412	4 611	20 541	16 165	36 784	1 428
Wisconsin	1	10	8	2 252	87 148	1 377	3 177	35 072	199 222	146 705	345 030	14 700

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337214, OFFICE FURNITURE (EXCEPT WOOD) MFG		337214, OFFICE FURNITURE (EXCEPT WOOD) MFG—Con.	
Companies ¹	number.. 301	Value added	\$1,000.. 4 954 085
All establishments	number.. 358	Total inventories, beginning of year	\$1,000.. 510 461
Establishments with 1 to 19 employees	number.. 178	Finished goods inventories, beginning of year	\$1,000.. 107 998
Establishments with 20 to 99 employees	number.. 95	Work-in-process inventories, beginning of year	\$1,000.. 108 440
Establishments with 100 employees or more	number.. 85	Materials and supplies inventories, beginning of year	\$1,000.. 294 023
All employees	number.. 44 218	Total inventories, end of year	\$1,000.. 492 858
Total compensation ²	\$1,000.. 2 096 958	Finished goods inventories, end of year	\$1,000.. 106 083
Annual payroll	\$1,000.. 1 621 034	Work-in-process inventories, end of year	\$1,000.. 93 139
Total fringe benefits	\$1,000.. 475 924	Materials and supplies inventories, end of year	\$1,000.. 293 636
Production workers, average for year	number.. 32 371	Gross book value of total assets at beginning of year	\$1,000.. 3 064 117
Production workers on March 12	number.. 31 330	Total capital expenditures (new and used)	\$1,000.. 321 493
Production workers on May 12	number.. 31 568	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 36 317
Production workers on August 12	number.. 32 808	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 285 176
Production workers on November 12	number.. 33 778	Total retirements ²	\$1,000.. 102 063
Production-worker hours	1,000.. 69 212	Gross book value of total assets at end of year	\$1,000.. 3 283 547
Production-worker wages	\$1,000.. 979 176	Total depreciation during year ²	\$1,000.. 215 398
Total cost of materials	\$1,000.. 3 259 031	Total rental payments ²	\$1,000.. 72 013
Cost of materials, parts, containers, etc., consumed	\$1,000.. 3 005 303	Buildings and other structures rental payments ²	\$1,000.. 32 548
Cost of resales	\$1,000.. 140 782	Machinery and equipment rental payments ²	\$1,000.. 39 465
Cost of fuels	\$1,000.. 21 211	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 18 176
Cost of purchased electricity	\$1,000.. 52 361	Response coverage ratio ⁴	percent.. 86
Cost of contract work	\$1,000.. 39 374	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 51 226
Quantity of electricity purchased for heat and power	1,000 kWh.. 910 673	Response coverage ratio ⁴	percent.. 86
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 23 217
Total value of shipments	\$1,000.. 8 230 332	Response coverage ratio ⁴	percent.. 86
Primary products value of shipments	\$1,000.. 7 544 785	Cost of purchased legal services ³	\$1,000.. 8 956
Secondary products value of shipments	\$1,000.. 437 675	Response coverage ratio ⁴	percent.. 86
Total miscellaneous receipts	\$1,000.. 247 872	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 367
Value of resales	\$1,000.. 231 827	Response coverage ratio ⁴	percent.. 86
Contract receipts	\$1,000.. 7 992	Cost of purchased advertising services ³	\$1,000.. 22 896
Other miscellaneous receipts	\$1,000.. 8 053	Response coverage ratio ⁴	percent.. 86
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³	\$1,000.. 14 357
Value of primary products shipments made in all industries	\$1,000.. 7 959 533	Response coverage ratio ⁴	percent.. 86
Value of primary products shipments made in this industry	\$1,000.. 7 544 785	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 10 587
Value of primary products shipments made in other industries	\$1,000.. 414 748	Response coverage ratio ⁴	percent.. 86
Coverage ratio	percent.. 94		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337214, OFFICE FURNITURE (EXCEPT WOOD) MFG												
All establishments	-	358	180	44 218	1 621 034	32 371	69 212	979 176	4 954 085	3 259 031	8 230 332	321 493
Establishments with 1 to 4 employees	9	66	-	153	4 006	114	182	2 443	10 923	9 326	20 493	686
Establishments with 5 to 9 employees	7	48	-	355	8 613	256	438	5 663	22 618	18 799	41 767	1 174
Establishments with 10 to 19 employees	5	64	-	869	19 657	635	992	12 484	50 945	47 262	98 420	3 408
Establishments with 20 to 49 employees	3	54	54	1 665	43 676	1 196	2 314	24 503	101 160	88 465	192 119	4 734
Establishments with 50 to 99 employees	2	41	41	2 856	76 425	2 193	4 546	49 100	225 840	172 164	401 656	13 106
Establishments with 100 to 249 employees	1	44	44	6 700	181 887	5 080	10 254	113 887	634 218	454 041	1 094 158	37 987
Establishments with 250 to 499 employees	-	23	23	7 463	240 581	5 928	13 443	173 918	819 707	651 069	1 469 069	45 530
Establishments with 500 to 999 employees	-	13	13	8 458	267 911	6 323	13 830	174 521	976 604	630 944	1 614 180	71 171
Establishments with 1,000 to 2,499 employees	-	3	3	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	-	2	2	D	D	D	D	D	D	D	D	D
Administrative records ²	9	134	-	1 000	20 903	730	1 048	13 611	57 088	51 664	109 442	3 674

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337214	Office furniture (except wood) mfg	358	44 218	1 621 034	32 371	69 212	979 176	4 954 085	3 259 031	8 230 332	321 493
3372141	Office seating, including upholstered, nonwood	37	6 152	177 408	4 191	8 374	103 588	561 944	512 090	1 089 213	20 071
3372144	Office desks and extensions, nonwood	18	1 541	42 594	1 109	2 243	22 879	98 300	99 430	200 075	5 821
3372147	Office storage units, files, and tables, nonwood	68	10 616	307 978	8 555	19 038	217 147	971 009	735 732	1 708 540	65 563
337214A	Office panel and modular systems, and all other office furniture, nonwood, nec	71	23 880	1 046 862	16 972	37 073	605 860	3 200 432	1 805 606	5 003 334	222 607

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337214	Office furniture, except wood	N	X	X	7 959 533	N	X	X	5 774 184
3372141	Office seating, including upholstered, nonwood	N	X	X	1 742 671	N	X	X	1 426 470
33721411	Office seating, including upholstered, nonwood, secretarial and general office and desk chairs	N	X	X	1 384 135	N	X	X	N
3372141111	Office seating, including upholstered, nonwood, secretarial chairs	17	X	923.3	212 806	N	X	N	N
3372141121	Office seating, including upholstered, nonwood, general office and desk chairs	41	X	P6 676.7	1 171 329	N	X	N	N
33721412	Office seating, including upholstered, nonwood, side and arm chairs, lounge seating, stacking chairs, and other office seating	N	X	X	255 691	N	X	X	N
3372141211	Office seating, including upholstered, nonwood, side and arm chairs	18	X	P1 154.9	146 232	N	X	N	N
3372141221	Office seating, including upholstered, nonwood, lounge seating	12	X	X	15 321	N	X	X	N
3372141231	Office seating, including upholstered, nonwood, stacking chairs	17	X	P938.5	54 414	N	X	N	N
3372141241	All other office seating, including upholstered, nonwood	9	X	X	39 724	N	X	X	N
3372141Y	Office seating, including upholstered, nonwood nsk	N	X	X	102 845	N	X	X	N
3372141YWV	Office seating, including upholstered, nonwood nsk	N	X	X	102 845	N	X	X	N
3372144	Office desks and extensions, nonwood	N	X	X	413 570	N	X	X	373 602
33721441	Office desks and extensions, nonwood	N	X	X	350 732	N	X	X	N
3372144111	Office desks, nonwood	36	X	S	323 797	N	X	N	N
3372144121	Office desk extensions, nonwood	12	X	X	26 935	N	X	X	N
3372144Y	Office desks and extensions, nonwood, nsk	N	X	X	62 838	N	X	X	N
3372144YWV	Office desks and extensions, nonwood, nsk	N	X	X	62 838	N	X	X	N
3372147	Office storage units, files, and tables, nonwood	N	X	X	2 048 602	N	X	X	1 511 554
33721471	Office files, vertical, letter and legal, nonwood	N	X	X	398 740	N	X	X	N
3372147111	Office files, vertical, letter and legal, nonwood	26	X	6 538.2	398 740	N	X	N	N
33721472	Office files, horizontal-lateral, letter and legal, nonwood	N	X	X	635 022	N	X	X	N
3372147211	Office files, horizontal-lateral, letter and legal, nonwood	27	X	Q2 181.8	635 022	N	X	N	N
33721473	All other office files, except vertical, nonwood	N	X	X	291 837	N	X	X	N
3372147311	Office files, all other, nonwood	29	X	X	291 837	N	X	X	N
33721474	Office storage credenzas, bookcases, storage units, and tables, nonwood	N	X	X	604 478	N	X	X	N
3372147411	Office storage credenzas, nonwood	10	X	51.6	10 868	N	X	N	N
3372147421	Office bookcases and other storage units, except credenzas, nonwood	35	X	X	263 370	N	X	X	N
3372147431	Office tables, work and conference, nonwood	30	X	Q1 546.1	184 771	N	X	N	N
3372147441	Office tables, equipment supporting, nonwood	16	X	P1 795.8	79 941	N	X	N	N
3372147451	Other office tables, nonwood	23	X	X	65 528	N	X	X	N
3372147Y	Office storage units, files, and tables, nonwood, nsk	N	X	X	118 525	N	X	X	N
3372147YWV	Office storage units, files, and tables, nonwood, nsk	N	X	X	118 525	N	X	X	N
337214A	Office panel and modular systems, and all other office furniture, nonwood, nec	N	X	X	3 486 494	N	X	X	2 326 138
337214A1	Office panel systems and components, nonwood	N	X	X	2 572 794	N	X	X	N
337214A111	Office panel systems and components, nonwood	41	X	X	2 572 794	N	X	X	N
337214A2	Modular and desking systems and accessories and all other office furniture, nonwood	N	X	X	812 220	N	X	X	N
337214A211	Office modular systems and accessories, nonwood	25	X	X	148 487	N	X	X	N
337214A221	Office desking systems and accessories, nonwood	29	X	X	494 438	N	X	X	N
337214A231	All other office furniture, nonwood, nec	29	X	X	169 295	N	X	X	N
337214AY	Office panel and modular systems and all other office furniture, nonwood, nec, nsk	N	X	X	101 480	N	X	X	N
337214AYWV	Office panel and modular systems and all other office furniture, nonwood, nec, nsk	N	X	X	101 480	N	X	X	N

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337214	Office furniture, except wood— Con.								
337214W	Office furniture, nonwood, nsk, total	N	X	X	268 196	N	X	X	136 420
337214WY	Office furniture manufacturing, nonwood, nsk, total	N	X	X	268 196	N	X	X	N
337214WYWW	Office furniture manufacturing, nonwood, nsk, for nonadministrative-record establishments	N	X	X	166 338	N	X	X	103 026
337214WYWY	Office furniture manufacturing, nonwood, nsk, for administrative-record establishments	N	X	X	101 858	N	X	X	33 394

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3372141	OFFICE SEATING, INCLUDING UPHOLSTERED, NONWOOD		
	United States	1 742 671	1 426 470
	California	198 147	150 475
	Florida	8 030	22 009
	Illinois	6 935	N
	Michigan	721 515	535 425
	Mississippi	115 878	76 705
	North Carolina	97 102	151 354
	Tennessee	86 335	73 887
	Texas	42 409	77 093
3372144	OFFICE DESKS AND EXTENSIONS, NONWOOD		
	United States	413 570	373 602
	California	14 132	32 148
	Indiana	6 129	4 996
	Michigan	84 237	61 697
	New York	14 338	12 939
	Pennsylvania	23 792	15 038
	Wisconsin	5 500	6 119
3372147	OFFICE STORAGE UNITS, FILES, AND TABLES, NONWOOD		
	United States	2 048 602	1 511 554
	Alabama	43 311	N
	California	185 383	147 245
	Illinois	111 041	75 546
	Indiana	29 717	31 493
	Maryland	2 264	N
	Michigan	707 213	420 310
	Minnesota	22 466	13 456
	New York	21 081	48 249
	North Carolina	7 443	12 167
	Ohio	24 314	N
	Pennsylvania	87 744	86 169
	Tennessee	78 039	120 669
	Wisconsin	111 052	67 962
337214A	OFFICE PANEL AND MODULAR SYSTEMS, AND ALL OTHER OFFICE FURNITURE, NONWOOD, NEC		
	United States	3 486 494	2 326 138
	California	202 423	164 471
	Illinois	13 335	N
	Indiana	33 955	N
	Michigan	2 281 150	1 450 789
	Minnesota	39 389	N
	New York	29 779	20 619
	Tennessee	47 283	N
	Wisconsin	81 833	N

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. **Materials Consumed by Kind: 1997 and 1992**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337214	OFFICE FURNITURE (EXCEPT WOOD) MFG				
332000AC	Metal stampings	X	136 836	X	D
33200043	All other fabricated metal products (except castings and forgings)	X	116 945	X	41 228
33210001	Forgings	X	D	X	D
33100035	Castings (rough and semifinished)	X	24 280	X	17 388
33120017	Steel sheet and strip, including tin plate	X	475 183	X	323 420
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	69 591	X	62 987
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	15 138	X	10 150
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	44 872	X	31 526
33100077	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	D
32100025	Hardwood lumber, rough and dressed	X	26 841	X	26 002
32100031	Softwood lumber, rough and dressed	X	1 751	X	3 059
00190097	Hardwood dimension and parts, including wood furniture frames	X	D	X	121 205
32121105	Hardwood veneer	X	36 470	X	7 330
32121101	Hardwood plywood	X	8 792	X	8 870
32121201	Softwood plywood	X	3 632	X	4 354
32121903	Particleboard (wood)	X	100 677	X	23 639
32121907	Medium density fiberboard (MDF)	X	16 255	X	D
32121909	Hardboard	X	17 205	X	10 742
32613001	Plastics laminated sheets	X	75 314	X	28 196
32619909	Plastics furniture parts and components	X	272 902	X	100 227
32615000	Formed and slab stock for pillows, cushions, seating, etc. (urethane)	X	35 476	X	48 371
31332007	Coated or laminated fabrics, including vinyl coated	X	121 322	X	189 753
31321019	Uncoated broadwoven fabrics for upholstery	X	114 891	X	209 504
32721101	Flat glass (plate, float, and sheet)	X	2 410	X	1 533
32552001	Adhesives and sealants	X	19 589	X	8 263
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	87 032	X	62 975
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	239 212	X	147 691
32221001	Paperboard containers, boxes, and corrugated paperboard	X	136 993	X	84 958
00970099	All other materials and components, parts, containers, and supplies	X	352 539	X	221 867
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	347 813	X	277 905

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337214 OFFICE FURNITURE (EXCEPT WOOD) MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing nonwood office-type furniture. The furniture may be made on a stock or custom basis and may be assembled or unassembled (i.e., knockdown).

The data published with NAICS code 337214 include the following SIC industry:

2522 Office furniture, except wood

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3999000 pt	3999000 pt
337110WYVW pt	2434002	2434002	337122WYVW pt	2511002	2511002	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2541002 pt	2541002 pt	337122WYVW pt	5712002 pt	5712002 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	5712002 pt	5712000 pt	33712241	25145	25145	337127WYVW pt	3952002 pt	3952002 pt
3371211 pt	25120 pt	25120 pt	3371224111	2514512	2514512	337127WYVW pt	3999002 pt	3999002 pt
3371211 pt	57121 pt	57120 pt	33712241121	2514513	2514513	3371290	25170	25170
3371211111	2512012	2512012	33712241121	2514513	2514513	3371290111	2517015	2517015
3371211211	2512041	2512041	33712241131	2514515	2514515	3371290211	2517018	2517018
3371211311	2512045	2512045	33712241141	2514517	2514517	3371290221	2517021	2517021
3371211411	2512054	2512054	33712241151	2514521	2514521	3371290YVW	2517000	2517000
3371211511	2512031	2512031	33712241161	2514527	2514527	3371290YVW	2517002	2517002
3371211521	2512035	2512035	33712241171	2514597	2514597	3372111	25212	25210 pt
3371211531 pt	2512098	2512098	33712241YVW	2514500	2514500	3372111111	2521211	2521000 pt
3371211531 pt	5712121	5712000 pt	33712244	25146	25146	3372111121	2521213	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	33712244111	2514612	2514612	3372111131	2521214	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	33712244121	2514614	2514614	3372111141	2521217	2521000 pt
3371214	25155	25155	33712244221	2514622	2514622	3372111151	2521219	2521000 pt
3371214100	2515500	2515500	33712244231	2514624	2514624	3372111161	2521221	2521000 pt
337121W pt	25120 pt	25120 pt	33712244241	2514698	2514698	3372111YVW	2521200	2521000 pt
337121W pt	25150 pt	25150 pt	33712244YVW	2514600	2514600	3372114	25213	25210 pt
337121W pt	57120 pt	57120 pt	33712247	25147	25147	3372114111	2521311	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371224711	2514733	2514733	3372114121	2521313	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	33712247121	2514737	2514737	3372114YVW	2521300	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371224721	2514775	2514775	3372117	25214	25210 pt
337121WYVW pt	2512002	2512002	33712247221	2514782	2514782	3372117111	2521411	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	33712247231	2514783	2514783	3372117121	2521413	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	33712247241	2514788	2514788	3372117311	2521415	2521000 pt
337121WYVW pt	2512002	2512002	33712247291 pt	2514789 pt	2514771	3372117321	2521417	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	33712247291 pt	2514789 pt	2514798	3372117331	2521419	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	33712247YVW	2514700	2514700	3372117341	2521425	2521000 pt
3371221 pt	25112	25112	3371224W	25140	25140	3372117351	2521427	2521000 pt
3371221 pt	57121 pt	57120 pt	3371224WYVW	2514000	2514000	3372117361	2521429	2521000 pt
3371221111	2511241	2511241	3371224WYVW	2514002	2514002	3372117YVW	2521400	2521000 pt
3371221211	2511219	2511219	3371250	25190	25190	337211A	25217	25210 pt
3371221221	2511251	2511251	3371250111	2519011	2519011	337211A111	2521711	2521000 pt
3371221231	2511271	2511271	3371250211	2519033	2519033	337211A121	2521713	2521000 pt
3371221241	2511281	2511281	3371250221	2519035	2519035	337211A131	2521715	2521000 pt
3371221311	2511233	2511233	3371250311 pt	2519015 pt	2519023	337211A141	2521719	2521000 pt
3371221321	2511235	2511235	3371250321	2519098	2519098	337211AYVW	2521700	2521000 pt
3371221391	2511291	2511291	3371250331 pt	2519015 pt	2519025	337211W	25210	25210 pt
3371221395 pt	2511298	2511298	3371250YVW	2519000	2519000	337211WYVW	3521000	2521000 pt
3371221395 pt	5712111	5712000 pt	3371250YVW	2519002	2519002	337211WYVW	2521002	2521002
3371221YVW pt	2511200	2511200	3371271	25311 pt	25311 pt	3372120 pt	25410 pt	25410 pt
3371221YVW pt	5712100 pt	5712000 pt	337127111	2531131	2531131	3372120 pt	25417 pt	25411 pt
3371224	25113	25113	3371271121	2531136	2531136	3372120 pt	25417 pt	25413 pt
3371224111	2511311	2511311	3371271121	2531137	2531137	3372120 pt	25417 pt	25413 pt
3371224211	2511331	2511331	33712712121	2531192	2531198 pt	3372120 pt	25417 pt	25413 pt
3371224311	2511351	2511351	3371271YVW	2531100 pt	2531100 pt	3372120100 pt	2541700 pt	2541111 pt
3371224321	2511371	2511371	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541121 pt
3371224391	2511391	2511391	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224395	2511399	2511399	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224YVW	2511300	2511300	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371227	25115	25115	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
3371227111	2511511	2511511	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371227121	2511513	2511513	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
3371227131	2511515	2511515	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541339 pt
3371227141	2511517	2511517	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227211	2511521	2511521	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227311	2511535	2511535	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
			3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
			3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
			3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWWW pt...	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWWW pt...	2541000 pt	2541000 pt
3372141121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWWW pt...	2542000	2542000
3372141211	2522114	2522100 pt	3372157	25421	25421	337215WYWWW pt...	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157111	2542113	2542113	337215WYWWW pt...	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157121	2542117	2542117	337215WYWWW pt...	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157131	2542119	2542119	337215WYWWW pt...	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157YVW	2542100	2542100	337215WYWWW pt...	3499002 pt	3499002 pt
3372144	25225	25225	337215A	25422	25422	3379101	25151	25151
3372144111	2522511	2522500 pt	337215A111	2542233	2542233	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
3372147311	2522619	2522600 pt	337215E111	2542341	2542341	3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E121	2542343	2542343	3379107	25153	25153
3372147421	2522613	2522600 pt	337215E131	2542345	2542345	3379107111	2515315	2515315
3372147431	2522625	2522600 pt	337215E141	2542347	2542347	3379107121	2515317	2515317
3372147441	2522627	2522600 pt	337215E151	2542349	2542349	3379107131	2515319	2515319
3372147451	2522629	2522600 pt	337215EYVW	2542300	2542300	3379107YVW	2515300	2515300
3372147YVW	2522600	2522600 pt	337215H pt	25424	25424	337910A	25156	25156
337214A	25227	25227	337215H111 pt	34998 pt	34998 pt	337910A111	2515613	2515613
337214A111	2522711	2522700 pt	337215H111 pt	2542461 pt	2542463	337910A121	2515619	2515619
337214A211	2522713	2522700 pt	337215H211 pt	2542461 pt	2542467 pt	337910AYVW	2515600	2515600
337214A221	2522715	2522700 pt	337215H211 pt	2542464 pt	2542465	337910W	25150 pt	25150 pt
337214A231	2522719	2522700 pt	337215H311	2542469	2542469	337910WYWWW	2515000 pt	2515000 pt
337214AYVW	2522700	2522700 pt	337215H321	2542471	2542471	337910WYVW	2515002 pt	2515002 pt
337214W	25220	25220	337215H331	2542499	2542499	3379201	25913	25913
337214WYVW	2522000	2522000	337215H341	3499896	3499899 pt	3379201111	2591311	2591311
337214WYVW	2522002	2522002	337215H351	3499897	3499899 pt	3379201121	2591313	2591313
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201131	2591315	2591315
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201YVW	2591300	2591300
3372151121	2541415	2541121 pt	337215K	24266	24266	3379204	25914	25914
3372151131	2541419	2541131 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
3372151YVW	2541400	2541100 pt	337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335	337215W pt	24260 pt	24260 pt	3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
3372154121 pt	2541613 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207YVW	2591500	2591500
3372154131 pt	2541615 pt	2541338 pt	337215W pt	25410 pt	25410 pt	337920W	25910	25910
3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYVW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Showcase, Partition, Shelving, and Locker Manufacturing

1997

Issued September 1999

EC97M-3372D

1997 Economic Census

Manufacturing

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Showcase, Partition, Shelving, and Locker Manufacturing

1997

Issued September 1999

EC97M-3372D

1997 Economic Census

Manufacturing

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337215	Showcase, partition, shelving, & locker mfg	2 076	2 156	75 388	2 084 588	57 760	109 654	1 286 974	4 491 094	3 526 262	8 006 290	226 969
242630	Hardwood dimension & flooring mills (pt)	N	246	6 310	115 008	5 380	9 828	88 973	199 386	183 749	382 917	11 245
254130	Wood partitions & fixtures (pt)	N	906	23 319	659 373	17 001	31 163	385 431	1 250 141	982 173	2 251 883	55 712
254200	Partitions & fixtures, except wood	N	926	44 464	1 274 838	34 356	66 719	789 838	2 975 129	2 303 659	5 248 433	149 919
349960	Fabricated metal products, n.e.c. (pt)	N	78	1 295	35 369	1 023	1 944	22 732	66 438	56 681	123 057	10 093

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
337215, SHOWCASE, PARTITION, SHELVING, & LOCKER MFG												
United States	1	2 156	812	75 388	2 084 588	57 760	109 654	1 286 974	4 491 094	3 526 262	8 006 290	226 969
Alabama	-	19	7	1 848	43 389	1 457	3 000	31 571	138 450	101 681	238 577	21 358
Arkansas	1	18	7	1 603	39 760	1 257	2 751	25 823	63 474	47 757	111 919	3 526
California	1	291	109	8 135	231 433	6 299	11 222	134 777	494 658	378 107	871 719	19 245
Florida	3	87	23	1 968	49 544	1 514	2 894	32 241	98 448	77 935	173 821	3 780
Georgia	-	67	22	2 348	65 803	1 743	3 387	40 874	140 254	110 209	250 441	5 252
Illinois	-	121	55	6 968	211 752	5 448	10 832	132 472	518 290	486 559	1 009 526	23 670
Indiana	1	49	20	2 489	75 214	1 963	3 835	48 823	138 812	108 544	242 337	8 239
Kansas	1	16	7	881	20 117	730	1 363	12 669	40 741	25 605	65 219	1 247
Kentucky	1	23	11	760	15 692	560	889	8 956	40 213	23 032	63 498	1 648
Massachusetts	2	30	9	644	20 591	486	1 024	13 058	41 163	27 939	68 589	1 641
Michigan	-	99	39	3 083	92 527	2 344	4 701	58 994	225 213	175 644	397 490	10 541
Minnesota	-	63	21	2 277	78 669	1 599	3 028	46 972	157 166	112 797	271 042	7 231
Mississippi	-	48	27	2 002	34 684	1 727	3 018	26 679	67 962	70 369	138 224	10 207
Missouri	1	51	17	1 821	48 428	1 433	2 891	28 895	94 074	85 405	178 678	3 447
Nebraska	-	10	5	1 420	37 615	1 111	2 088	25 604	151 150	86 668	234 871	5 114
New Jersey	4	79	32	2 535	82 302	1 838	3 553	45 312	152 115	127 153	276 166	6 266
New York	2	151	64	5 336	140 319	3 776	6 359	77 441	314 946	195 627	507 729	9 894
North Carolina	1	176	72	4 938	114 051	4 054	7 523	78 355	208 739	171 801	384 248	11 265
Ohio	1	112	53	4 795	155 327	3 528	7 222	96 726	319 295	273 502	594 192	18 095
Oklahoma	1	16	4	381	7 502	319	577	5 301	19 192	14 112	33 031	1 393
Oregon	2	34	11	915	31 456	548	976	16 873	60 525	40 956	100 643	2 394
Pennsylvania	3	91	33	2 786	78 913	2 111	3 882	47 106	150 475	143 705	292 488	6 759
Tennessee	-	43	12	1 973	52 172	1 670	2 890	34 477	134 365	104 714	241 792	10 251
Virginia	3	32	12	1 327	30 826	972	1 968	21 116	65 661	53 622	116 083	2 336
Washington	2	40	10	653	21 400	485	981	13 502	30 907	29 123	63 520	1 598
Wisconsin	3	52	20	1 960	55 681	1 436	2 817	32 978	105 751	84 839	191 886	4 807

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337215, SHOWCASE, PARTITION, SHELVING, & LOCKER MFG		337215, SHOWCASE, PARTITION, SHELVING, & LOCKER MFG—Con.	
Companies ¹	number.. 2 076	Value added	\$1,000.. 4 491 094
All establishments	number.. 2 156	Total inventories, beginning of year	\$1,000.. 979 636
Establishments with 1 to 19 employees	number.. 1 344	Finished goods inventories, beginning of year	\$1,000.. 371 505
Establishments with 20 to 99 employees	number.. 645	Work-in-process inventories, beginning of year	\$1,000.. 232 904
Establishments with 100 employees or more	number.. 167	Materials and supplies inventories, beginning of year	\$1,000.. 375 227
All employees	number.. 75 388	Total inventories, end of year	\$1,000.. 976 842
Total compensation ²	\$1,000.. 2 548 700	Finished goods inventories, end of year	\$1,000.. 381 540
Annual payroll	\$1,000.. 2 084 588	Work-in-process inventories, end of year	\$1,000.. 233 935
Total fringe benefits	\$1,000.. 464 112	Materials and supplies inventories, end of year	\$1,000.. 361 367
Production workers, average for year	number.. 57 760	Gross book value of total assets at beginning of year	\$1,000.. 1 927 511
Production workers on March 12	number.. 56 750	Total capital expenditures (new and used)	\$1,000.. 226 969
Production workers on May 12	number.. 57 542	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 48 618
Production workers on August 12	number.. 58 589	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 178 351
Production workers on November 12	number.. 58 159	Total retirements ²	\$1,000.. 40 107
Production-worker hours	1,000.. 109 654	Gross book value of total assets at end of year	\$1,000.. 2 114 373
Production-worker wages	\$1,000.. 1 286 974	Total depreciation during year ²	\$1,000.. 168 965
Total cost of materials	\$1,000.. 3 526 262	Total rental payments ²	\$1,000.. 155 843
Cost of materials, parts, containers, etc., consumed	\$1,000.. 2 955 651	Buildings and other structures rental payments ²	\$1,000.. 86 834
Cost of resales	\$1,000.. 289 291	Machinery and equipment rental payments ²	\$1,000.. 69 009
Cost of fuels	\$1,000.. 39 294	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 12 560
Cost of purchased electricity	\$1,000.. 74 046	Response coverage ratio ⁴	percent.. 70
Cost of contract work	\$1,000.. 167 980	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 28 644
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 225 874	Response coverage ratio ⁴	percent.. 70
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 13 877
Total value of shipments	\$1,000.. 8 006 290	Response coverage ratio ⁴	percent.. 70
Primary products value of shipments	\$1,000.. 7 146 396	Cost of purchased legal services ³	\$1,000.. 6 854
Secondary products value of shipments	\$1,000.. 402 692	Response coverage ratio ⁴	percent.. 70
Total miscellaneous receipts	\$1,000.. 457 202	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 7 955
Value of resales	\$1,000.. 351 595	Response coverage ratio ⁴	percent.. 70
Contract receipts	\$1,000.. 25 072	Cost of purchased advertising services ³	\$1,000.. 16 401
Other miscellaneous receipts	\$1,000.. 80 535	Response coverage ratio ⁴	percent.. 70
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³	\$1,000.. 5 515
Value of primary products shipments made in all industries	\$1,000.. 7 651 534	Response coverage ratio ⁴	percent.. 70
Value of primary products shipments made in this industry	\$1,000.. 7 146 396	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 8 947
Value of primary products shipments made in other industries	\$1,000.. 505 138	Response coverage ratio ⁴	percent.. 70
Coverage ratio	percent.. 93		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337215, SHOWCASE, PARTITION, SHELVING, & LOCKER MFG												
All establishments	1	2 156	812	75 388	2 084 588	57 760	109 654	1 286 974	4 491 094	3 526 262	8 006 290	226 969
Establishments with 1 to 4 employees	8	520	—	1 089	24 684	909	1 376	15 984	44 671	38 525	83 233	2 131
Establishments with 5 to 9 employees	5	419	—	2 847	68 033	2 167	3 493	42 355	129 373	97 581	226 109	5 689
Establishments with 10 to 19 employees	3	405	—	5 713	141 740	4 319	7 412	86 767	275 115	219 815	493 010	13 763
Establishments with 20 to 49 employees	1	440	440	13 742	365 607	10 623	19 400	226 133	793 118	581 408	1 372 435	44 858
Establishments with 50 to 99 employees	2	205	205	14 244	409 175	10 899	21 054	241 295	785 838	623 110	1 412 226	40 130
Establishments with 100 to 249 employees	1	126	126	19 422	558 879	14 655	28 533	334 333	1 193 467	1 047 854	2 242 324	46 861
Establishments with 250 to 499 employees	—	29	29	9 865	300 758	7 319	15 272	187 903	691 366	560 613	1 247 977	34 273
Establishments with 500 to 999 employees	—	10	10	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	2	2	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	638	—	2 953	59 410	2 330	3 275	37 919	105 175	93 533	198 264	5 445

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337215	Showcase, partition, shelving, & locker mfg ...	2 156	75 388	2 084 588	57 760	109 654	1 286 974	4 491 094	3 526 262	8 006 290	226 969
3372151	Wood partitions, shelving, and lockers, except custom	34	1 651	41 003	1 216	2 391	23 932	69 569	77 276	154 294	4 582
3372154	Wood fixtures for stores, banks, and offices, and other miscellaneous fixtures, except custom	419	15 448	449 109	11 403	21 203	266 942	862 835	641 546	1 511 708	31 963
3372157	Prefabricated partitions, assembled or knocked-down, nonwood	31	2 469	79 633	1 553	3 202	39 220	138 910	125 762	263 398	8 340
337215A	Shelving and lockers, nonwood	45	10 232	297 152	8 030	15 758	196 336	840 841	590 835	1 422 151	49 438
337215E	Storage racks and accessories, nonwood	91	8 038	242 918	6 513	12 893	159 085	630 877	531 009	1 159 907	30 439
337215H	Fixtures for stores, banks, and offices, and miscellaneous fixtures, nonwood	299	19 080	542 125	14 709	29 053	324 896	1 141 542	855 276	1 981 867	59 224
337215K	Wood furniture frames for household furniture, including frames for upholstered furniture	169	5 910	108 450	5 036	9 264	83 478	187 642	171 364	358 780	10 598

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337215	Showcases, partitions, shelving, and lockers	N	X	X	7 651 534	N	X	X	N
3372151	Wood partitions, shelving, and lockers, except custom	N	X	X	213 112	N	X	X	N
33721511	Prefabricated wood partitions (assembled or knocked-down), and wood shelving and lockers, except custom	N	X	X	212 281	N	X	X	N
3372151111	Wood partitions, prefabricated (assembled or knocked-down), except custom	22	X	X	64 544	N	X	X	N
3372151121	Wood shelving, except custom	31	X	X	138 296	N	X	X	N
3372151131	Wood lockers, except custom	8	X	X	9 441	N	X	X	N
3372151Y	Wood partitions, shelving, and lockers, nsk	N	X	X	831	N	X	X	N
3372151YVV	Wood partitions, shelving, and lockers, nsk	N	X	X	831	N	X	X	N
3372154	Wood fixtures for stores, banks, and offices, and other miscellaneous fixtures, except custom	N	X	X	1 533 707	N	X	X	N
33721541	Wood fixtures for stores, banks, and offices, and other miscellaneous fixtures, except custom	N	X	X	1 409 998	N	X	X	N
3372154111	Wood walls and wall fixtures, manufacturers' standard, for retail stores	91	X	X	155 388	N	X	X	N
3372154121	Wood center floor tables and gondolas, manufacturers' standard, for retail stores	82	X	X	138 170	N	X	X	N
3372154131	Other wood fixtures and displays, manufacturers' standard, for retail stores	131	X	X	377 555	N	X	X	N
3372154141	Other wood show and display cases, including wall types, and tables, nec, except custom	104	X	X	203 471	N	X	X	N
3372154151	Wood cabinets, floor or wall types, for stores, banks, and offices, except custom	161	X	X	191 824	N	X	X	N
3372154161	Wood counters, excluding bank counters, except custom	54	X	X	44 473	N	X	X	N
3372154171	Wood bank fixtures, including bank counters, except custom	42	X	X	23 618	N	X	X	N
3372154181	Other wood fixtures, including backs, telephone booths, cashier stands, miscellaneous display fixtures, etc., except custom	98	X	X	275 499	N	X	X	N
3372154Y	Wood fixtures for stores, banks, and offices, and other miscellaneous fixtures, nsk	N	X	X	123 709	N	X	X	N
3372154YVV	Wood fixtures for stores, banks, and offices, and other miscellaneous fixtures, nsk	N	X	X	123 709	N	X	X	N
3372157	Prefabricated partitions, assembled or knocked-down, nonwood	N	X	X	276 894	N	X	X	219 850
33721571	Prefabricated partitions, assembled or knocked-down, nonwood	N	X	X	276 894	N	X	X	N
3372157111	Toilet partitions, nonwood	16	X	X	111 562	20	X	X	77 587
3372157121	Movable partitions, except freestanding, nonwood	18	X	X	125 792	20	X	X	124 521
3372157131	Other partitions (excluding accordion and folding-door type), nonwood	6	X	X	39 540	6	X	X	11 427
3372157Y	Partitions, prefabricated (assembled or knocked-down), nonwood, nsk	N	X	X	-	N	X	X	N
3372157YVV	Partitions, prefabricated (assembled or knocked-down), nonwood, nsk	N	X	X	-	N	X	X	6 315
337215A	Shelving and lockers, nonwood	N	X	X	1 169 795	N	X	X	739 898
337215A1	Commercial shelving (factory, store, etc.), nonwood	N	X	X	731 816	N	X	X	N
337215A111	Commercial shelving (factory, store, etc.), nonwood	42	X	X	731 816	60	X	X	418 998
337215A2	Bookstacks, other shelving, and lockers, nonwood	N	X	X	398 878	N	X	X	N
337215A211	Bookstacks (library, office, and school), nonwood	15	X	X	90 396	16	X	X	37 933
337215A221	Other shelving, including shelving for correspondence, computer tapes and disks, microfilm, etc., nonwood	14	X	X	129 446	33	X	X	123 686
337215A231	Lockers, nonwood	16	X	X	179 036	19	X	X	140 921
337215AY	Shelving and lockers, nonwood, nsk	N	X	X	39 101	N	X	X	N
337215AYVV	Shelving and lockers, nonwood, nsk	N	X	X	39 101	N	X	X	18 360

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337215	Showcases, partitions, shelving, and lockers—Con.								
337215E	Storage racks and accessories, nonwood	N	X	X	1 134 747	N	X	X	647 849
337215E1	Storage racks and accessories, nonwood	N	X	X	1 041 303	N	X	X	N
337215E111	Drive-in-drive-thru and gravity conveyor or pallet storage racks, nonwood	21	X	X	112 249	25	X	X	71 201
337215E121	Cantilever storage racks, nonwood	16	X	X	61 958	22	X	X	47 659
337215E131	Portable stacking racks and frames, nonwood	29	X	X	89 564	27	X	X	71 523
337215E141	Stacker-racks (pallet support, beams perpendicular to the storage aisle), nonwood	14	X	X	115 042	19	X	X	72 157
337215E151	Other racks, including conventional pallet racks and accessories, nonwood	81	X	X	662 490	70	X	X	326 959
337215EY	Storage racks and accessories, nonwood, nsk	N	X	X	93 444	N	X	X	N
337215EYWV	Storage racks and accessories, nonwood, nsk	N	X	X	93 444	N	X	X	58 350
337215H	Fixtures for stores, banks, and offices, and miscellaneous fixtures, nonwood	N	X	X	1 906 127	N	X	X	N
337215H1	Custom store fixtures, retail, except retail food stores, nonwood	N	X	X	908 745	N	X	X	N
337215H111	Custom store fixtures for retail stores, nonwood	141	X	X	908 745	N	X	X	N
337215H2	Manufacturers' standard store fixtures, retail, nonwood	N	X	X	258 722	N	X	X	N
337215H211	Manufacturers' standard store fixtures, retail, nonwood	51	X	X	258 722	N	X	X	N
337215H3	Other show and display cases, cabinets, and other fixtures, nec, nonwood	N	X	X	584 651	N	X	X	N
337215H311	Other show and display cases (including wall types) and tables, nec, nonwood	70	X	X	158 789	49	X	X	90 153
337215H321	Cabinets (floor or wall types), nec, for stores, banks, and offices, nonwood	59	X	X	103 062	53	X	X	155 332
337215H331	Other fixtures (counters, window backs, telephone booths, miscellaneous display fixtures, cashier stands, etc.), nec, nonwood	65	X	X	191 365	81	X	X	134 321
337215H341	Metal furniture parts, household	28	X	X	47 480	N	X	X	N
337215H351	Metal furniture parts, office	41	X	X	83 955	N	X	X	N
337215HY	Fixtures for stores, banks, and offices, and miscellaneous fixtures, nonwood, nsk	N	X	X	154 009	N	X	X	N
337215HYWV	Fixtures for stores, banks, and offices, and miscellaneous fixtures, nonwood, nsk	N	X	X	154 009	N	X	X	N
337215K	Wood furniture frames for household furniture, including frames for upholstered furniture	N	X	X	363 367	N	X	X	273 056
337215K1	Wood furniture frames for household furniture, including frames for upholstered furniture	N	X	X	328 454	N	X	X	N
337215K111	Wood furniture frames for household seating	136	X	S	261 007	132	X	% 429.8	226 261
337215K121	Wood furniture frames for other household furniture	40	X	S	67 447	24	X	S	35 931
337215KY	Wood furniture frames for household furniture, including frames for upholstered furniture, nsk	N	X	X	34 913	N	X	X	N
337215KYWV	Wood furniture frames for household furniture, including frames for upholstered furniture, nsk	N	X	X	34 913	N	X	X	10 864
337215W	Showcases, partitions, shelving, and lockers, nsk, total	N	X	X	1 053 785	N	X	X	N
337215WY	Showcase, partition, shelving, and locker manufacturing, nsk, total	N	X	X	1 053 785	N	X	X	N
337215WYWV	Showcase, partition, shelving, and locker manufacturing, nsk, for nonadministrative-record establishments	N	X	X	863 808	N	X	X	N
337215WYWY	Showcase, partition, shelving, and locker manufacturing, nsk, for administrative-record establishments	N	X	X	189 977	N	X	X	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; a 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3372151	WOOD PARTITIONS, SHELVING, AND LOCKERS, EXCEPT CUSTOM		
	United States	213 112	N
	California	10 140	N
	Florida	23 650	N
	Illinois	12 692	N
	Michigan	2 012	N
	New York	6 060	N
	North Carolina	4 772	N
3372154	WOOD FIXTURES FOR STORES, BANKS, AND OFFICES, AND OTHER MISCELLANEOUS FIXTURES, EXCEPT CUSTOM		
	United States	1 533 707	N
	Alabama	33 267	N
	Arizona	12 373	N
	Arkansas	22 343	N
	California	204 639	N
	Colorado	9 651	N
	Connecticut	24 380	N
	Florida	62 242	N
	Georgia	32 250	N
	Idaho	2 056	N
	Illinois	62 683	N
	Indiana	26 679	N
	Iowa	8 433	N
	Kansas	11 763	N
	Kentucky	13 749	N
	Maine	14 353	N
	Maryland	20 416	N
	Massachusetts	26 039	N
	Michigan	37 684	N
	Minnesota	65 825	N
	Missouri	29 673	N
	New Jersey	73 414	N
	New York	108 294	N
	North Carolina	63 758	N
	Ohio	100 909	N
	Oklahoma	13 835	N
	Oregon	60 266	N
	Pennsylvania	71 382	N
	Tennessee	9 807	N
	Texas	115 903	N
	Utah	8 743	N
	Virginia	60 448	N
Washington	26 696	N	
Wisconsin	31 678	N	
3372157	PREFABRICATED PARTITIONS, ASSEMBLED OR KNOCKED-DOWN, NONWOOD		
	United States	276 894	219 850
	California	17 149	15 388
	New York	68 868	57 780
	Ohio	44 320	5 373
	Pennsylvania	12 936	12 247
Texas	8 013	N	
337215A	SHELVING AND LOCKERS, NONWOOD		
	United States	1 169 795	739 898
	Alabama	109 014	N
	Illinois	306 115	178 528
	New Jersey	8 633	46 197
	New York	66 210	17 035
Ohio	61 645	58 662	
Pennsylvania	61 982	62 970	
337215E	STORAGE RACKS AND ACCESSORIES, NONWOOD		
	United States	1 134 747	647 849
	California	137 211	68 277
	Georgia	39 823	18 246
	Illinois	126 503	91 969
	Michigan	222 517	92 808
	New Jersey	55 221	N
	New York	4 426	13 314
	North Carolina	49 995	9 158
	Ohio	183 681	41 859
	Pennsylvania	51 148	41 234
	Tennessee	74 635	N
	Texas	17 230	27 839
Washington	2 754	N	
Wisconsin	7 245	4 687	

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
337215H	FIXTURES FOR STORES, BANKS, AND OFFICES, AND MISCELLANEOUS FIXTURES, NONWOOD		
	United States	1 906 127	N
	Alabama	36 336	N
	Arizona	6 660	N
	California	246 925	N
	Colorado	23 416	N
	Florida	33 833	N
	Georgia	82 232	N
	Illinois	244 364	N
	Indiana	101 874	N
	Iowa	5 043	N
	Kansas	32 366	N
	Kentucky	33 059	N
	Massachusetts	5 753	N
	Michigan	70 238	N
	Minnesota	145 945	N
	Mississippi	6 189	N
	Missouri	83 062	N
	New Jersey	105 089	N
	New York	110 128	N
	North Carolina	65 884	N
	Ohio	80 021	N
	Oregon	4 152	N
	Pennsylvania	55 361	N
	Rhode Island	34 352	N
	Texas	51 138	N
	Utah	17 751	N
	Washington	18 913	N
	Wisconsin	86 216	N
337215K	WOOD FURNITURE FRAMES FOR HOUSEHOLD FURNITURE, INCLUDING FRAMES FOR UPHOLSTERED FURNITURE		
	United States	363 367	273 056
	California	37 994	20 472
	Florida	2 189	N
	Massachusetts	2 333	N
	Mississippi	107 917	69 333
	Missouri	6 181	N
	North Carolina	137 371	93 434
	Pennsylvania	3 311	N
	Tennessee	10 772	10 740

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337215	SHOWCASE, PARTITION, SHELVING, & LOCKER MFG				
332000AC	Metal stampings	X	69 938	X	N
33200043	All other fabricated metal products (except castings and forgings)	X	141 068	X	N
33210001	Forgings	X	4 597	X	N
33100035	Castings (rough and semifinished)	X	5 094	X	N
33120017	Steel sheet and strip, including tin plate	X	582 484	X	N
33120083	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	159 537	X	N
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	35 815	X	N
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	36 754	X	N
33100077	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	4 725	X	N
32100025	Hardwood lumber, rough and dressed	X	98 877	X	N
32100031	Softwood lumber, rough and dressed	X	29 850	X	N
00190097	Hardwood dimension and parts, including wood furniture frames	X	24 726	X	N
32121105	Hardwood veneer	X	10 987	X	N
32121101	Hardwood plywood	X	53 352	X	N
32121201	Softwood plywood	X	24 483	X	N
32121903	Particleboard (wood)	X	99 757	X	N
32121907	Medium density fiberboard (MDF)	X	46 123	X	N
32121909	Hardboard	X	23 626	X	N
32613001	Plastics laminated sheets	X	76 053	X	N
32619909	Plastics furniture parts and components	X	33 335	X	N

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337215	SHOWCASE, PARTITION, SHELVING, & LOCKER MFG—Con.				
32615000	Formed and slab stock for pillows, cushions, seating, etc. (urethane)	X	1 197	X	N
31332007	Coated or laminated fabrics, including vinyl coated	X	3 102	X	N
31321019	Uncoated broadwoven fabrics for upholstery	X	4 071	X	N
32721101	Flat glass (plate, float, and sheet)	X	14 823	X	N
32552001	Adhesives and sealants	X	10 801	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	82 189	X	N
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	74 105	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	90 851	X	N
00970099	All other materials and components, parts, containers, and supplies	X	389 523	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	723 808	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337215 SHOWCASE, PARTITION, SHELVING, AND LOCKER MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing wood and nonwood office and store fixtures, shelving, lockers, frames, partitions, and related fabricated products of wood and nonwood materials, including plastics laminated fixture tops. The products are made on a stock basis and may be assembled or unassembled (i.e., knockdown). Establishments exclusively making furniture parts (e.g., frames) are included in this industry.

The data published with NAICS code 337215 include the following SIC industries:

- 2426 Hardwood dimension and flooring mills (pt)
- 2541 Wood partitions and fixtures (pt)

- 2542 Partitions and fixtures, except wood
- 3499 Fabricated metal products, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 337215 include establishments primarily engaged in manufacturing wood or nonwood lunchroom tables and chairs, but do not include establishments primarily engaged in manufacturing wood or metal box spring frames, finished plastic furniture parts, convertible bed sleeper mechanism or chair glides. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110W pt	57120 pt	57120 pt	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3952000 pt	3952000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	2511002	2511002	337127WYVW pt	3999000 pt	3999000 pt
337110WYVW pt	5712000 pt	5712000 pt	337122WYVW pt	5712002 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434002	2434002	33712241	25145	25145	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	5712002 pt	5712002 pt	3371224111	2514512	2514512	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	2541002 pt	2541002 pt	33712241121	2514513	2514513	337127WYVW pt	3999002 pt	3999002 pt
337110WYVW pt	5712002 pt	5712000 pt	33712241131	2514515	2514515	3371290	25170	25170
3371211	25120 pt	25120 pt	33712241141	2514517	2514517	3371290111	2517015	2517015
3371211 pt	57121 pt	57120 pt	33712241151	2514521	2514521	3371290211	2517018	2517018
3371211111	2512012	2512012	33712241161	2514527	2514527	3371290221	2517021	2517021
3371211211	2512041	2512041	33712241171	2514527	2514527	3371290YVW	2517000	2517000
3371211311	2512045	2512045	33712241177	2514597	2514597	3371290YVW	2517002	2517002
3371211411	2512054	2512054	33712241YVW	2514500	2514500	3372111	25212	25210 pt
3371211511	2512031	2512031	33712244	25146	25146	3372111111	2521211	2521000 pt
3371211521	2512035	2512035	33712244111	2514612	2514612	3372111121	2521213	2521000 pt
3371211531 pt	2512098	2512098	33712244121	2514614	2514614	3372111131	2521214	2521000 pt
3371211531 pt	5712121	5712000 pt	33712244221	2514622	2514622	3372111141	2521217	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	33712244231	2514624	2514624	3372111151	2521219	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	33712244241	2514698	2514698	3372111161	2521221	2521000 pt
3371214	25155	25155	33712244YVW	2514600	2514600	3372111YVW	2521200	2521000 pt
3371214100	2515500	2515500	3371247	25147	25147	3372114	25213	25210 pt
337121W pt	25120 pt	25120 pt	3371247111	2514733	2514733	3372114111	2521311	2521000 pt
337121W pt	25150 pt	25150 pt	3371247121	2514737	2514737	3372114121	2521313	2521000 pt
337121W pt	57120 pt	57120 pt	3371247211	2514775	2514775	3372114YVW	2521300	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247221	2514782	2514782	3372117	25214	25210 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247231	2514783	2514783	3372117111	2521411	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247241	2514788	2514788	3372117211	2521413	2521000 pt
337121WYVW pt	2512002	2512002	3371247291 pt	2514789 pt	2514771	3372117311	2521415	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371247YVW	2514789 pt	2514798	3372117321	2521417	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	337124W	2514700	2514700	3372117331	2521419	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	337124WYVW	2514000	2514000	3372117341	2521425	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	337124WYVW	2514002	2514002	3372117351	2521427	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	3372117361	2521429	2521000 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	3372117YVW	2521400	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	337211A	25217	25210 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A111	2521711	2521000 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A121	2521713	2521000 pt
3371221231	2511271	2511271	3371250311 pt	2519015 pt	2519025	337211A131	2521715	2521000 pt
3371221241	2511281	2511281	3371250321	2519098	2519098	337211A141	2521719	2521000 pt
3371221311	2511233	2511233	3371250YVW	2519000	2519000	337211AYVW	2521700	2521000 pt
3371221321	2511235	2511235	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221391	2511291	2511291	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	2511298	2511298	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221395 pt	5712111	5712000 pt	3371271211	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	2511200	2511200	3371271221	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224	25113	25113	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224111	2511311	2511311	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224211	2511331	2511331	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224311	2511351	2511351	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224321	2511371	2511371	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
3371224391	2511391	2511391	3371274141	2531241	2531241	3372120100 pt	2541700 pt	2541333
3371224395	2511399	2511399	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371224YVW	2511300	2511300	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
3371227	25115	25115	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541339 pt
3371227111	2511511	2511511	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227121	2511513	2511513	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227131	2511515	2511515	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227141	2511517	2511517	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227211	2511521	2511521	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
3371227311	2511535	2511535	3371274YVW pt	3999900 pt	3999900 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWWW pt...	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWWW pt...	2541000 pt	2541000 pt
337214121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWWW pt...	2542000	2542000
3372141211	2522114	2522100 pt	3372157	25421	25421	337215WYWWW pt...	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157111	2542113	2542113	337215WYWWW pt...	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157121	2542117	2542117	337215WYWWW pt...	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157131	2542119	2542119	337215WYWWW pt...	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157YVW	2542100	2542100	337215WYWWW pt...	3499002 pt	3499002 pt
3372144	25225	25225	337215A	25422	25422	3379101	25151	25151
3372144111	2522511	2522500 pt	337215A111	2542233	2542233	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
3372147311	2522619	2522600 pt	337215E111	2542341	2542341	3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E121	2542343	2542343	3379107	25153	25153
3372147421	2522613	2522600 pt	337215E131	2542345	2542345	3379107111	2515315	2515315
3372147431	2522625	2522600 pt	337215E141	2542347	2542347	3379107121	2515317	2515317
3372147441	2522627	2522600 pt	337215E151	2542349	2542349	3379107131	2515319	2515319
3372147451	2522629	2522600 pt	337215EYVW	2542300	2542300	3379107YVW	2515300	2515300
3372147YVW	2522600	2522600 pt	337215H pt	25424	25424	337910A	25156	25156
337214A	25227	25227	337215H111 pt	34998 pt	34998 pt	337910A111	2515613	2515613
337214A111	2522711	2522700 pt	337215H111 pt	2542461 pt	2542463	337910A121	2515619	2515619
337214A211	2522713	2522700 pt	337215H211 pt	2542461 pt	2542467 pt	337910AYVW	2515600	2515600
337214A221	2522715	2522700 pt	337215H211 pt	2542464 pt	2542465	337910W	25150 pt	25150 pt
337214A231	2522719	2522700 pt	337215H311	2542469	2542469	337910WYWWW	2515000 pt	2515000 pt
337214AYVW	2522700	2522700 pt	337215H321	2542471	2542471	337910WYVW	2515002 pt	2515002 pt
337214W	25220	25220	337215H331	2542499	2542499	3379201	25913	25913
337214WYVW	2522000	2522000	337215H341	3499896	3499899 pt	3379201111	2591311	2591311
337214WYVW	2522002	2522002	337215H351	3499897	3499899 pt	3379201121	2591313	2591313
3372151	25414	25411 pt	337215HYVW pt...	2542400	2542400	3379201131	2591315	2591315
3372151111	2541413	2541111 pt	337215HYVW pt...	3499800 pt	3499800 pt	3379201YVW	2591300	2591300
3372151121	2541415	2541121 pt	337215K	24266	24266	3379204	25914	25914
3372151131	2541419	2541131 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
3372151YVW	2541400	2541100 pt	337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335	337215W pt	24260 pt	24260 pt	3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
3372154121 pt	2541613 pt	2541338 pt	337215W pt	25420	25420	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207YVW	2591500	2591500
3372154131 pt	2541615 pt	2541338 pt	337215W pt	25410 pt	25410 pt	337920W	25910	25910
3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYVW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

Mattress Manufacturing

1997

Issued July 1999

EC97M-3379A

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Mattress Manufacturing

1997

Issued July 1999

EC97M-3379A

1997 Economic Census

Manufacturing

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econgguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337910	Mattress mfg	624	702	22 711	602 613	16 992	33 322	364 786	1 918 807	1 953 482	3 869 064	124 148
251520	Mattresses & bedspings (pt) ..	N	702	22 711	602 613	16 992	33 322	364 786	1 918 807	1 953 482	3 869 064	124 148

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337910, MATTRESS MFG												
United States	1	702	280	22 711	602 613	16 992	33 322	364 786	1 918 807	1 953 482	3 869 064	124 148
Alabama	1	14	8	439	9 962	307	608	5 976	36 313	39 906	76 138	6 846
Arizona	-	18	5	349	8 806	254	529	6 521	28 639	33 730	62 126	2 497
California	1	102	34	2 913	77 232	2 256	4 408	47 309	263 147	254 873	514 700	12 080
Colorado	-	13	6	389	11 903	285	579	7 301	41 154	34 778	75 762	1 107
Connecticut	6	7	2	214	6 408	152	381	4 051	19 141	19 777	39 022	1 993
Florida	2	46	21	2 009	45 035	1 428	2 900	25 719	145 411	138 614	281 647	6 431
Georgia	1	25	10	894	23 103	723	1 555	14 974	97 235	77 216	174 505	4 077
Illinois	-	28	8	835	24 002	629	1 266	15 324	65 596	70 962	136 354	2 125
Indiana	-	15	8	457	14 202	276	606	6 916	37 262	33 845	71 328	2 373
Maryland	1	6	5	523	14 619	398	686	8 711	51 561	50 108	100 858	1 595
Massachusetts	-	18	9	791	23 996	588	1 216	15 049	82 283	78 347	161 564	6 187
Michigan	1	21	7	427	11 373	336	654	7 511	39 129	36 849	75 957	956
New Jersey	2	18	10	908	25 715	719	1 522	16 731	87 091	88 001	177 112	5 611
New York	1	23	7	533	11 759	412	658	7 068	38 761	40 556	78 833	4 210
North Carolina	-	31	16	1 266	34 326	1 020	1 920	20 141	91 936	86 869	179 051	7 263
Ohio	-	22	13	1 075	31 242	727	1 404	17 736	102 768	97 809	200 817	4 016
Oregon	-	8	3	212	6 075	170	346	4 541	19 635	19 623	39 081	445
Pennsylvania	-	25	11	779	21 821	602	1 145	12 719	77 701	62 744	140 100	1 499
Tennessee	1	19	10	722	18 449	556	989	11 314	53 111	62 095	114 853	2 227
Texas	1	52	18	1 555	35 851	1 202	2 306	22 574	127 076	127 787	254 531	4 921
Virginia	2	15	8	585	15 224	446	925	9 799	53 128	46 589	99 518	3 489
Washington	1	18	6	579	15 647	429	829	10 486	57 432	50 077	107 584	2 638

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337910, MATTRESS MFG		337910, MATTRESS MFG—Con.	
Companies ¹	number.. 624	Value added	\$.1,000.. 1 918 807
All establishments	number.. 702	Total inventories, beginning of year	\$.1,000.. 210 986
Establishments with 1 to 19 employees	number.. 422	Finished goods inventories, beginning of year	\$.1,000.. 52 075
Establishments with 20 to 99 employees	number.. 222	Work-in-process inventories, beginning of year	\$.1,000.. 19 621
Establishments with 100 employees or more	number.. 58	Materials and supplies inventories, beginning of year	\$.1,000.. 139 290
All employees	number.. 22 711	Total inventories, end of year	\$.1,000.. 230 613
Total compensation ²	\$.1,000.. 751 011	Finished goods inventories, end of year	\$.1,000.. 54 597
Annual payroll	\$.1,000.. 602 613	Work-in-process inventories, end of year	\$.1,000.. 20 324
Total fringe benefits	\$.1,000.. 148 398	Materials and supplies inventories, end of year	\$.1,000.. 155 692
Production workers, average for year	number.. 16 992	Gross book value of total assets at beginning of year	\$.1,000.. 484 099
Production workers on March 15	number.. 16 422	Total capital expenditures (new and used)	\$.1,000.. 124 148
Production workers on May 15	number.. 16 732	Capital expenditures for buildings and other structures	
Production workers on August 15	number.. 17 322	(new and used)	\$.1,000.. 27 274
Production workers on November 15	number.. 17 492	Capital expenditures for machinery and equipment (new	
Production-worker hours	1,000.. 33 322	and used)	\$.1,000.. 96 874
Production-worker wages	\$.1,000.. 364 786	Total retirements ²	\$.1,000.. 12 851
Total cost of materials	\$.1,000.. 1 953 482	Gross book value of total assets at end of year	\$.1,000.. 595 396
Cost of materials, parts, containers, etc., consumed	\$.1,000.. 1 890 414	Total depreciation during year ²	\$.1,000.. 42 801
Cost of resales	\$.1,000.. 42 968	Total rental payments ²	\$.1,000.. 68 243
Cost of fuels	\$.1,000.. 4 606	Buildings and other structures rental payments ²	\$.1,000.. 44 320
Cost of purchased electricity	\$.1,000.. 12 219	Machinery and equipment rental payments ²	\$.1,000.. 23 923
Cost of contract work	\$.1,000.. 3 275	Cost of purchased services for the repair of buildings and other	
Quantity of electricity purchased for heat and power	1,000 kWh.. 180 793	structures ³	\$.1,000.. 4 643
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Response coverage ratio ⁴	percent.. 75
Total value of shipments	\$.1,000.. 3 869 064	Cost of purchased services for the repair of machinery and	
Primary products value of shipments	\$.1,000.. 3 698 984	equipment ³	\$.1,000.. 12 175
Secondary products value of shipments	\$.1,000.. 89 362	Response coverage ratio ⁴	percent.. 75
Total miscellaneous receipts	\$.1,000.. 80 718	Cost of purchased communications services ³	\$.1,000.. 6 281
Value of resales	\$.1,000.. 71 136	Response coverage ratio ⁴	percent.. 75
Contract receipts	\$.1,000.. 2 391	Cost of purchased legal services ³	\$.1,000.. 3 370
Other miscellaneous receipts	\$.1,000.. 7 191	Response coverage ratio ⁴	percent.. 75
Primary products specialization ratio	percent.. 97	Cost of purchased accounting and bookkeeping services ³	\$.1,000.. 1 890
Value of primary products shipments made in all industries	\$.1,000.. 3 794 892	Response coverage ratio ⁴	percent.. 75
Value of primary products shipments made in this industry	\$.1,000.. 3 698 984	Cost of purchased advertising services ³	\$.1,000.. 140 836
Value of primary products shipments made in other		Response coverage ratio ⁴	percent.. 75
industries	\$.1,000.. 95 908	Cost of purchased software and other data processing	
Coverage ratio	percent.. 97	services ³	\$.1,000.. 2 745
		Response coverage ratio ⁴	percent.. 75
		Cost of purchased refuse removal (including hazardous waste)	
		services ³	\$.1,000.. 3 248
		Response coverage ratio ⁴	percent.. 75

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337910, MATTRESS MFG												
All establishments	1	702	280	22 711	602 613	16 992	33 322	364 786	1 918 807	1 953 482	3 869 064	124 148
Establishments with 1 to 4 employees	8	208	—	423	9 463	335	560	5 913	30 350	34 890	65 572	4 324
Establishments with 5 to 9 employees	6	109	—	727	14 831	535	836	8 707	55 800	50 587	106 602	5 665
Establishments with 10 to 19 employees	2	105	—	1 474	30 389	1 098	1 904	18 910	96 268	113 128	209 074	7 436
Establishments with 20 to 49 employees	1	127	127	4 048	93 850	2 859	5 386	52 912	248 776	298 876	543 132	17 561
Establishments with 50 to 99 employees	1	95	95	6 799	183 635	5 017	10 212	106 168	521 375	547 516	1 069 427	44 232
Establishments with 100 to 249 employees	—	55	55	8 232	244 566	6 357	12 935	154 682	881 294	834 633	1 714 985	D
Establishments with 250 to 499 employees	1	3	3	1 008	25 879	791	1 489	17 494	84 944	73 852	160 272	D
Establishments with 500 to 999 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	200	—	679	13 538	531	817	8 695	44 925	50 051	95 340	6 948

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337910	Mattress mfg	702	22 711	602 613	16 992	33 322	364 786	1 918 807	1 953 482	3 869 064	124 148
3379101	Innerspring mattresses, excluding crib-size, including those with topper pads and those sold as part of hollywood beds	336	17 911	487 370	13 428	26 757	298 190	1 633 166	1 545 150	3 175 563	83 008
3379104	Other mattresses, including crib mattresses and mattress inserts	42	1 805	44 445	1 325	2 609	25 839	115 701	136 727	251 126	7 605
3379107	Foundations, excluding innerspring units and those incorporated into hybrid-type flotation and adjustable ensembles	25	975	25 550	676	1 350	14 018	59 957	82 258	142 529	6 691
337910A	Sleep system ensembles, excluding conventional waterbeds	8	654	17 931	502	898	9 435	26 346	96 011	122 243	14 063

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337910	Mattresses	N	X	X	3 794 892	N	X	X	N
3379101	Innerspring mattresses, excluding crib-size, including those with polyurethane or rubber topper pads and those sold as part of hollywood beds, excluding inserts	N	X	X	2 122 665	N	X	X	1 200 021
33791011	Innerspring mattresses, excluding crib-size, including those with polyurethane or rubber topper pads and those sold as part of hollywood beds, excluding inserts	N	X	X	2 122 665	N	X	X	N
3379101100	Innerspring mattresses, excluding crib-size, including those with polyurethane or rubber topper pads and those sold as part of hollywood beds, excluding inserts	N	X	X	2 122 665	N	X	X	N
3379104	thousands	293	X	917 742.4	2 122 665	273	X	912 311.5	1 200 021
3379104	Other mattresses, including crib mattresses and mattress inserts	N	X	X	251 060	N	X	X	209 537
33791041	Other mattresses, including crib mattresses, foam core mattresses other than crib-size, inflatable air chambered, and mattress inserts	N	X	X	249 523	N	X	X	N
3379104111	Crib mattresses, all types, including crib-size mattresses made with innersprings, polyurethane, latex, foam, hair, cotton felt, etc.	12	X	X	76 806	17	X	X	53 446
3379104121	Foam core mattresses, other than crib-size	42	X	X	33 497	54	X	X	39 773
3379104131	Other mattresses, including inflatable air chambered, cotton felt, hair, etc. (excludes sleep system ensembles)	19	X	X	55 157	17	X	X	67 768
3379104141	Mattress inserts for dual-purpose sleep furniture (innerspring and foam) and futons shipped without frames	38	X	X	84 063	27	X	X	37 995
3379104Y	Other mattresses, including crib mattresses and mattress inserts, nsk	N	X	X	1 537	N	X	X	N
3379104YVW	Other mattresses, including crib mattresses and mattress inserts, nsk	N	X	X	1 537	N	X	X	10 555
3379107	Foundations, excluding innerspring units and those incorporated into hybrid-type flotation and adjustable ensembles	N	X	X	1 100 252	N	X	X	684 080
33791071	Foundations, including spring, foam and platform, excluding innerspring units and those incorporated into hybrid-type flotation and adjustable ensembles	N	X	X	1 092 193	N	X	X	N
3379107111	Spring foundations, excluding innerspring units and those incorporated into hybrid-type flotation and adjustable ensembles	187	X	99 802.4	986 989	183	X	97 074.4	582 863
3379107121	Foam foundations, excluding those incorporated into hybrid-type flotation and adjustable ensembles	36	X	665.4	35 352	46	X	S	47 502
3379107131	thousands	68	X	X	69 852	65	X	X	38 669
3379107Y	Other foundations, including platform, excluding those incorporated into hybrid-type flotation, air, and adjustable ensembles	N	X	X	8 059	N	X	X	N
3379107YVW	Foundations, excluding innerspring units and those incorporated into hybrid-type flotation and adjustable ensembles, nsk	N	X	X	8 059	N	X	X	15 046
337910A	Foundations, excluding innerspring units and those incorporated into hybrid-type flotation and adjustable ensembles, nsk	N	X	X	8 059	N	X	X	15 046
337910A1	Sleep system ensembles, excluding conventional waterbeds	N	X	X	138 050	N	X	X	131 570
337910A11	Sleep system ensembles, excluding conventional waterbeds, including hybrid-type system flotation ensembles	N	X	X	138 050	N	X	X	N
337910A111	Hybrid-type sleep system flotation ensembles, excluding conventional waterbeds	8	X	X	16 240	10	X	X	33 338
337910A121	Electric adjustable sleep system ensemble, excluding hospital and conventional waterbeds	33	X	X	121 810	27	X	X	89 613
337910AY	Sleep system ensembles, excluding conventional waterbeds, nsk	N	X	X	—	N	X	X	N
337910AYVW	Sleep system ensembles, excluding conventional waterbeds, nsk	N	X	X	—	N	X	X	8 619
337910W	Mattresses and foundations, nsk, total	N	X	X	182 865	N	X	X	N
337910WY	Mattresses and foundations, nsk, total	N	X	X	182 865	N	X	X	N
337910WYVW	Mattresses and foundations, nsk, for nonadministrative-record establishments	N	X	X	87 958	N	X	X	N
337910WYVWY	Mattresses and foundations, nsk, for administrative-record establishments	N	X	X	94 907	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 6a. **Products Statistics: 1997 and 1992—Con.**

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3379101	INNERSPRING MATTRESSES, EXCLUDING CRIB-SIZE, INCLUDING THOSE WITH POLYURETHANE OR RUBBER TOPPER PADS AND THOSE SOLD AS PART OF HOLLYWOOD BEDS, EXCLUDING INSERTS		
	United States	2 122 665	1 200 021
	Alabama	54 537	12 047
	Arizona	38 601	11 431
	Arkansas	6 084	6 733
	California	276 679	184 251
	Colorado	41 631	31 096
	Florida	176 045	74 287
	Georgia	85 809	47 369
	Hawaii	10 345	N
	Idaho	4 478	N
	Illinois	59 243	32 535
	Indiana	38 372	19 008
	Iowa	30 055	9 127
	Kansas	38 352	11 844
	Maryland	55 242	27 488
	Massachusetts	58 855	38 494
	Michigan	55 405	20 184
	Minnesota	37 404	7 397
	Mississippi	41 337	36 357
	Missouri	24 868	21 325
	New Jersey	123 182	93 004
	New York	42 866	21 346
	North Carolina	88 236	47 059
	Ohio	105 924	59 329
	Oklahoma	22 164	8 300
	Oregon	23 574	19 062
	Pennsylvania	76 476	56 172
	Tennessee	57 561	41 239
	Texas	151 205	67 373
	Utah	17 059	10 773
	Virginia	68 393	40 723
	Washington	57 056	25 565
West Virginia	17 923	N	
Wisconsin	72 287	47 847	
3379104	OTHER MATTRESSES, INCLUDING CRIB MATTRESSES AND MATTRESS INSERTS		
	United States	251 060	209 537
	California	52 515	38 511
	Florida	23 991	22 190
	Georgia	5 352	3 684
	Indiana	8 972	2 218
	Massachusetts	21 469	5 687
	New York	2 188	10 617
	North Carolina	8 120	14 864
	Tennessee	2 763	6 114
Texas	13 906	N	
3379107	FOUNDATIONS, EXCLUDING INNERSPRING UNITS AND THOSE INCORPORATED INTO HYBRID-TYPE FLOTATION AND ADJUSTABLE ENSEMBLES		
	United States	1 100 252	684 080
	Alabama	17 681	6 782
	Arizona	17 442	12 417
	Arkansas	2 674	2 808
	California	107 640	78 777
	Colorado	28 299	11 556
	Florida	77 366	47 965
	Georgia	56 702	30 226
	Illinois	40 438	21 857
	Indiana	15 323	12 128
	Iowa	20 458	5 715
	Massachusetts	65 164	34 452
	Michigan	9 994	14 294
	Minnesota	14 005	10 824
	Mississippi	14 134	9 997
	Missouri	16 109	14 117
	New Jersey	46 547	32 392
	North Carolina	64 530	23 909
	Ohio	70 836	42 967
	Oklahoma	12 083	N
	Pennsylvania	46 729	31 864
	Tennessee	38 869	32 523
Texas	74 343	55 263	
Utah	9 289	3 550	
Virginia	25 980	12 840	
Washington	29 935	11 923	
West Virginia	12 102	N	
Wisconsin	58 229	28 108	

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
337910A	SLEEP SYSTEM ENSEMBLES, EXCLUDING CONVENTIONAL WATERBEDS		
	United States	138 050	131 570
	Florida	2 947	N

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337910	MATTRESS MFG				
00190097	Hardwood dimension and parts, including wood furniture frames	X	75 909	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	35 883	X	N
33100001	Metal mill shapes and forms, including castings (steel, aluminum, etc.)	X	18 433	X	N
33261200	Springs, innerspring units, and box spring constructions	X	472 007	X	N
33251007	Constructions (sleeper mechanisms) for dual purpose sleep furniture	X	7 479	X	N
32600001	Foam cores for mattresses, including latex, excluding topper pads	X	64 070	X	N
31320011	Woven upholstery fabrics (cotton, nylon, polyester, rayon, etc.), excluding ticking	X	43 468	X	N
31321005	Ticking (mattress)	X	256 413	X	N
00190047	Cotton linters and cotton waste	X	21 192	X	N
32600059	Padding, foam (except mattress cores)	X	207 885	X	N
00190048	Cotton felt filling materials, purchased premade	X	18 549	X	N
00190049	Insulators, all types, except cotton felt, purchased premade	X	56 231	X	N
00190044	Other cushioning materials, purchased premade	X	17 369	X	N
32220017	Paper and paperboard containers, including shipping sacks and other paper packaging supplies	X	15 875	X	N
00970099	All other materials and components, parts, containers, and supplies	X	217 257	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	362 394	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337910 MATTRESS MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing innerspring, box spring, and noninnerspring mattresses, including mattresses for waterbeds.

The data published with NAICS code 337910 include the following SIC industry:

2515 Mattresses and bedsprings (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2599000 pt	2599000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	2531000 pt	2531000 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	2511000	2511000	337127WYVW pt	2599000 pt	2599000 pt
337110WYVW pt	2541000 pt	2541000 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	3952000 pt	3952000 pt
337110WYVW pt	5712000 pt	2434002	337122WYVW pt	2511002	2511002	337127WYVW pt	3999000 pt	3999000 pt
337110WYVW pt	2434002	2434002	337122WYVW pt	5712002 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2541002 pt	2541002 pt	33712241	25145	25145	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	5712002 pt	5712000 pt	337124111	2514512	2514512	337127WYVW pt	3952002 pt	3952002 pt
3371211 pt	25120 pt	25120 pt	3371241121	2514513	2514513	337127WYVW pt	3999002 pt	3999002 pt
3371211 pt	57121 pt	57120 pt	3371241131	2514515	2514515	3371290	25170	25170
3371211111	2512012	2512012	3371241141	2514517	2514517	3371290111	2517015	2517015
3371211211	2512041	2512041	3371241151	2514521	2514521	3371290211	2517018	2517018
3371211311	2512045	2512045	3371241161	2514527	2514527	3371290221	2517021	2517021
3371211411	2512054	2512054	3371241171	2514597	2514597	3371290YVW	2517000	2517000
3371211511	2512031	2512031	3371241YVW	2514500	2514500	3371290YVW	2517002	2517002
3371211521	2512035	2512035	3371244	25146	25146	3372111	25212	25210 pt
3371211531 pt	2512098	2512098	3371244111	2514612	2514612	3372111111	2521211	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244121	2514614	2514614	3372111121	2521213	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371244221	2514622	2514622	3372111131	2521214	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371244231	2514624	2514624	3372111141	2521217	2521000 pt
3371214	25155	25155	3371244241	2514698	2514698	3372111151	2521219	2521000 pt
3371214100	2515500	2515500	3371244YVW	2514600	2514600	3372111161	2521221	2521000 pt
337121W pt	25120 pt	25120 pt	3371247	25147	25147	3372111YVW	2521200	2521000 pt
337121W pt	25150 pt	25150 pt	3371247111	2514733	2514733	3372114	25213	25210 pt
337121W pt	57120 pt	57120 pt	3371247121	2514737	2514737	3372114111	2521311	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247211	2514775	2514775	3372114121	2521313	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247221	2514782	2514782	3372114YVW	2521300	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247231	2514783	2514783	3372117	25214	25210 pt
337121WYVW pt	2512002	2512002	3371247241	2514788	2514788	3372117111	2521411	2521000 pt
337121WYVW pt	2512002	2512002	3371247291 pt	2514789 pt	2514771	3372117121	2521413	2521000 pt
337121WYVW pt	5715002 pt	5715002 pt	3371247YVW	2514700	2514700	3372117311	2521415	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	337124W	25140	25140	3372117321	2521417	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	337124WYVW	2514000	2514000	3372117331	2521419	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	337124WYVW	2514002	2514002	3372117341	2521425	2521000 pt
3371221 pt	25112	25112	3371250	25190	25190	3372117351	2521427	2521000 pt
3371221 pt	57121 pt	57120 pt	3371250111	2519011	2519011	3372117361	2521429	2521000 pt
3371221111	2511241	2511241	3371250211	2519033	2519033	3372117YVW	2521400	2521000 pt
3371221211	2511219	2511219	3371250221	2519035	2519035	337211A	25217	25210 pt
3371221221	2511251	2511251	3371250311 pt	2519015 pt	2519023	337211A111	2521711	2521000 pt
3371221231	2511271	2511271	3371250311 pt	2519015 pt	2519025	337211A121	2521713	2521000 pt
3371221241	2511281	2511281	3371250321	2519098	2519098	337211A131	2521715	2521000 pt
3371221311	2511233	2511233	3371250YVW	2519000	2519000	337211A141	2521719	2521000 pt
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3371221391	2511291	2511291	3371271	25311 pt	25311 pt	337211W	25210	25210 pt
3371221395 pt	2511298	2511298	3371271111	2531131	2531131	337211WYVW	3521000	2521000 pt
3371221395 pt	5712111	5712000 pt	3371271121	2531136	2531136	337211WYVW	2521002	2521002
3371221YVW pt	2511200	2511200	3371271211	2531137	2531137	3372120 pt	25410 pt	25410 pt
3371221YVW pt	5712100 pt	5712000 pt	3371271221	2531192	2531198 pt	3372120 pt	25417 pt	25411 pt
3371224	25113	25113	3371271YVW	2531100 pt	2531100 pt	3372120 pt	25417 pt	25413 pt
3371224111	2511311	2511311	3371274 pt	25312 pt	25312 pt	3372120100 pt	2541700 pt	2541111 pt
3371224211	2511331	2511331	3371274 pt	39999 pt	39999 pt	3372120100 pt	2541700 pt	2541121 pt
3371224311	2511351	2511351	3371274111	2531271	2531271	3372120100 pt	2541700 pt	2541131 pt
3371224321	2511371	2511371	3371274121	2531234	2531234	3372120100 pt	2541700 pt	2541200 pt
3371224391	2511391	2511391	3371274131	2531239	2531239	3372120100 pt	2541700 pt	2541332
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3371224YVW	2511300	2511300	3371274151	2531251	2531251	3372120100 pt	2541700 pt	2541334
3371227	25115	25115	3371274161	2531255	2531255	3372120100 pt	2541700 pt	2541338 pt
3371227111	2511511	2511511	3371274171	2531257	2531257	3372120100 pt	2541700 pt	2541339 pt
3371227121	2511513	2511513	3371274175	3999912	3999911 pt	3372120100 pt	2541700 pt	2541381 pt
3371227131	2511515	2511515	3371274181	2531259	2531259	3372120100 pt	2541700 pt	2541397 pt
3371227141	2511517	2511517	3371274191	2531261	2531261	3372120YVW pt	2541000 pt	2541000 pt
3371227211	2511521	2511521	3371274195	2531297	2531297	3372120YVW pt	2541700 pt	2541100 pt
3371227311	2511535	2511535	3371274YVW pt	2531200 pt	2531200 pt	3372120YVW pt	2541600 pt	2541300 pt
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1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3372120YWY	2541002 pt	2541002 pt	3372154161	2541625	2541361 pt	337215W pt	34990 pt	34990 pt
3372141	25221	25221	3372154171	2541629	2541381 pt	337215WYWW pt	2426000 pt	2426000 pt
3372141111	2522111	2522100 pt	3372154181	2541631	2541397 pt	337215WYWW pt	2541000 pt	2541000 pt
3372141121	2522113	2522100 pt	3372154YVW	2541600 pt	2541300 pt	337215WYWW pt	2542000	2542000
3372141211	2522114	2522100 pt	3372157	25421	25421	337215WYWW pt	3499000 pt	3499000 pt
3372141221	2522117	2522100 pt	3372157111	2542113	2542113	337215WYWW pt	2426002 pt	2426002 pt
3372141231	2522119	2522100 pt	3372157121	2542117	2542117	337215WYWW pt	2541002 pt	2541002 pt
3372141241	2522121	2522100 pt	3372157131	2542119	2542119	337215WYWW pt	2542002	2542002
3372141YVW	2522100	2522100 pt	3372157YVW	2542100	2542100	337215WYWW pt	3499002 pt	3499002 pt
3372144	25225	25225	337215A	25422	25422	3379101	25151	25151
3372144111	2522511	2522500 pt	337215A111	2542233	2542233	3379101100	2515100	2515100
3372144121	2522513	2522500 pt	337215A211	2542237	2542237	3379104	25152	25152
3372144YVW	2522500	2522500 pt	337215A221	2542241	2542241	3379104111	2515211	2515211
3372147	25226	25226	337215A231	2542251	2542251	3379104121	2515215	2515215
3372147111	2522615	2522600 pt	337215AYVW	2542200	2542200	3379104131	2515247	2515247
3372147211	2522617	2522600 pt	337215E	25423	25423	3379104141	2515265	2515265
3372147311	2522619	2522600 pt	337215E111	2542341	2542341	3379104YVW	2515200	2515200
3372147411	2522611	2522600 pt	337215E121	2542343	2542343	3379107	25153	25153
3372147421	2522613	2522600 pt	337215E131	2542345	2542345	3379107111	2515315	2515315
3372147431	2522625	2522600 pt	337215E141	2542347	2542347	3379107121	2515317	2515317
3372147441	2522627	2522600 pt	337215E151	2542349	2542349	3379107131	2515319	2515319
3372147451	2522629	2522600 pt	337215EYVW	2542300	2542300	3379107YVW	2515300	2515300
3372147YVW	2522600	2522600 pt	337215H pt	25424	25424	337910A	25156	25156
337214A	25227	25227	337215H111 pt	34998 pt	34998 pt	337910A111	2515613	2515613
337214A111	2522711	2522700 pt	337215H111 pt	2542461 pt	2542463	337910A121	2515619	2515619
337214A211	2522713	2522700 pt	337215H211 pt	2542461 pt	2542467 pt	337910AYVW	2515600	2515600
337214A221	2522715	2522700 pt	337215H211 pt	2542464 pt	2542465	337910W	25150 pt	25150 pt
337214A231	2522719	2522700 pt	337215H311	2542469	2542469	337910WYWW	2515000 pt	2515000 pt
337214AYVW	2522700	2522700 pt	337215H321	2542471	2542471	337910WYWW	2515002 pt	2515002 pt
337214W	25220	25220	337215H331	2542499	2542499	3379201	25913	25913
337214WYWW	2522000	2522000	337215H341	3499896	3499899 pt	3379201111	2591311	2591311
337214WYVW	2522002	2522002	337215H351	3499897	3499899 pt	3379201121	2591313	2591313
3372151	25414	25411 pt	337215HYVW pt	2542400	2542400	3379201131	2591315	2591315
3372151111	2541413	2541111 pt	337215HYVW pt	3499800 pt	3499800 pt	3379201YVW	2591300	2591300
3372151121	2541415	2541121 pt	337215K	24266	24266	3379204	25914	25914
3372151131	2541419	2541131 pt	337215K111	2426611	2426611	3379204111	2591452	2591452
3372151YVW	2541400	2541100 pt	337215K121	2426613	2426613	3379204211	2591458	2591458
3372154	25416	25413 pt	337215KYVW	2426600	2426600	3379204311	2591471	2591471
3372154111 pt	2541611 pt	2541335	337215W pt	24260 pt	24260 pt	3379204YVW	2591400	2591400
3372154111 pt	2541611 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207	25915	25915
3372154121 pt	2541613 pt	2541336	337215W pt	25420	25420	3379207111	2591511	2591511
3372154121 pt	2541613 pt	2541338 pt	337215W pt	25410 pt	25410 pt	3379207121	2591517	2591517
3372154131 pt	2541615 pt	2541337	337215W pt	25410 pt	25410 pt	3379207YVW	2591500	2591500
3372154131 pt	2541615 pt	2541338 pt	337215W pt	25410 pt	25410 pt	337920W	25910	25910
3372154141	2541621	2541339 pt	337215W pt	25420	25420	337920WYWW	2591000	2591000
3372154151	2541623	2541341 pt				337920WYVW	2591002	2591002

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1997

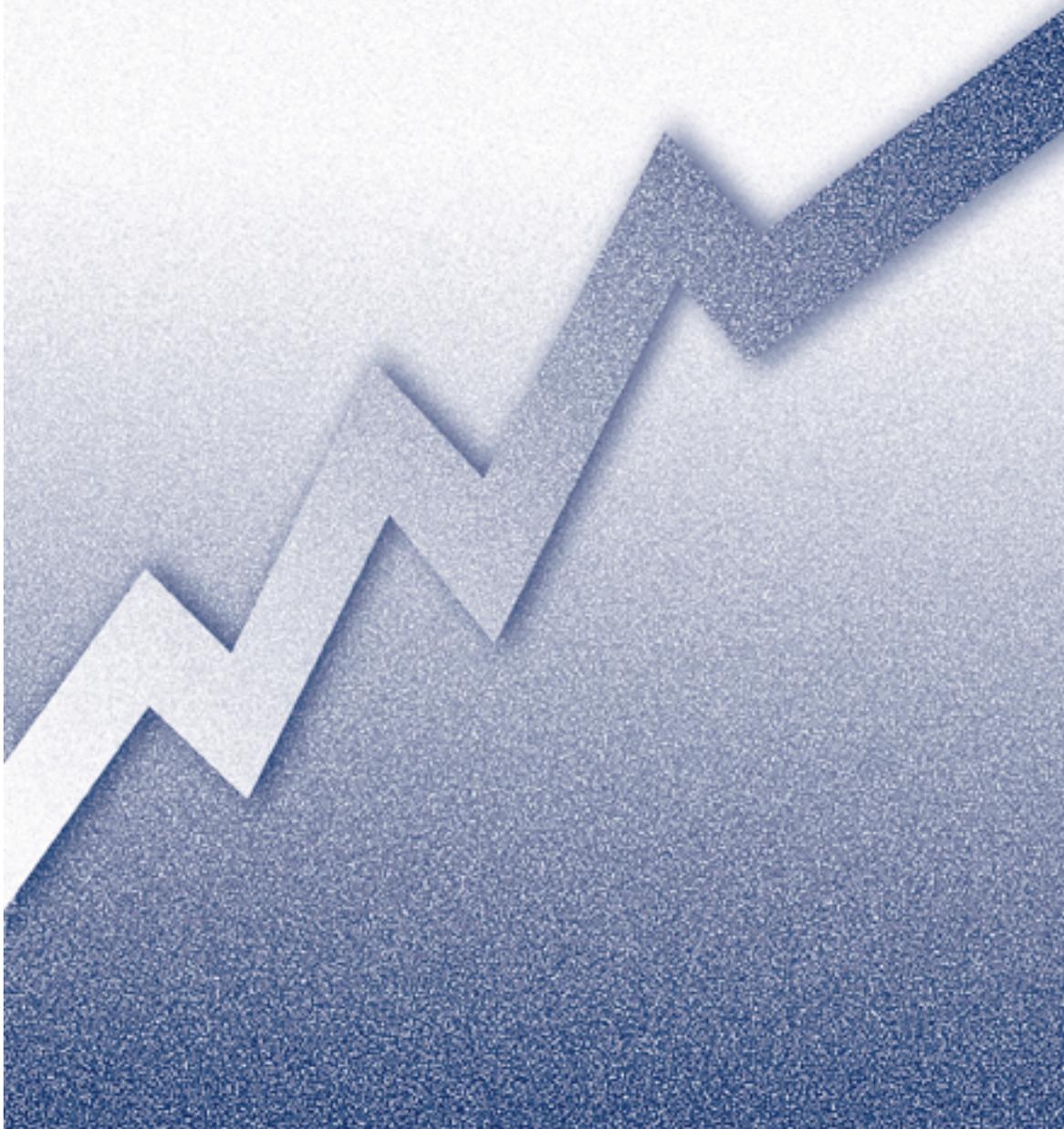
Issued July 1999

EC97M-3379B

1997 Economic Census

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Blind and Shade Manufacturing

1997

Issued July 1999

EC97M-3379B

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337920 259100	Blind & shade mfg Drapery hardware, blinds, & shades	442 N	486 486	19 625 19 625	434 966 434 966	13 780 13 780	28 126 28 126	262 799 262 799	1 147 269 1 147 269	1 210 649 1 210 649	2 363 862 2 363 862	44 380 44 380

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337920, BLIND & SHADE MFG												
United States	1	486	146	19 625	434 966	13 780	28 126	262 799	1 147 269	1 210 649	2 363 862	44 380
Arizona	4	10	3	313	6 009	188	337	2 197	21 610	15 567	41 943	1 093
California	2	61	28	3 420	76 078	2 389	4 785	41 430	221 130	231 393	454 859	7 678
Colorado	-	8	1	247	5 458	96	199	1 717	12 525	7 766	19 882	343
Connecticut	6	7	2	187	4 307	140	249	2 382	6 369	10 190	16 942	290
Florida	1	84	18	1 842	36 934	1 327	2 603	21 651	69 751	88 875	158 759	7 662
Georgia	-	11	3	479	8 931	298	644	5 498	21 270	41 749	61 382	1 199
Illinois	1	31	5	1 389	28 316	706	1 421	15 538	133 369	77 138	214 954	2 862
Indiana	1	16	7	1 251	26 153	951	2 105	16 247	54 145	50 637	105 539	1 191
Maryland	-	10	4	844	15 633	496	820	6 702	46 316	59 032	105 874	928
Michigan	-	11	4	670	22 888	558	1 354	17 233	103 077	48 842	146 901	1 742
New Jersey	-	22	6	731	15 490	515	1 094	9 233	29 327	41 560	68 923	1 291
New York	6	38	6	481	10 580	336	686	6 329	20 147	23 866	44 844	632
North Carolina	4	8	3	133	4 330	79	101	1 486	3 955	6 114	10 155	924
Ohio	1	12	2	118	2 006	55	70	623	3 964	7 004	10 984	157
Pennsylvania	-	23	6	1 082	21 901	832	1 779	18 154	97 155	57 567	149 663	2 193
Tennessee	-	5	4	326	7 161	270	547	5 319	19 002	21 471	43 109	289
Texas	-	31	19	2 039	40 006	1 481	3 515	25 612	118 226	130 997	247 565	2 868
Virginia	2	11	2	144	2 874	120	228	2 130	6 149	9 919	16 076	133

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
337920, BLIND & SHADE MFG		337920, BLIND & SHADE MFG—Con.	
Companies ¹ number..	442	Value added \$1,000..	1 147 269
All establishments number..	486	Total inventories, beginning of year \$1,000..	361 098
Establishments with 1 to 19 employees number..	340	Finished goods inventories, beginning of year \$1,000..	112 006
Establishments with 20 to 99 employees number..	96	Work-in-process inventories, beginning of year \$1,000..	33 765
Establishments with 100 employees or more number..	50	Materials and supplies inventories, beginning of year \$1,000..	215 327
All employees number..	19 625	Total inventories, end of year \$1,000..	354 347
Total compensation ² \$1,000..	555 387	Finished goods inventories, end of year \$1,000..	110 569
Annual payroll \$1,000..	434 966	Work-in-process inventories, end of year \$1,000..	29 258
Total fringe benefits \$1,000..	120 421	Materials and supplies inventories, end of year \$1,000..	214 520
Production workers, average for year number..	13 780	Gross book value of total assets at beginning of year \$1,000..	448 728
Production workers on March 15 number..	13 537	Total capital expenditures (new and used) \$1,000..	44 380
Production workers on May 15 number..	13 573	Capital expenditures for buildings and other structures (new and used) \$1,000..	16 123
Production workers on August 15 number..	14 036	Capital expenditures for machinery and equipment (new and used) \$1,000..	28 257
Production workers on November 15 number..	13 974	Total retirements ² \$1,000..	14 488
Production-worker hours 1,000..	28 126	Gross book value of total assets at end of year \$1,000..	478 620
Production-worker wages \$1,000..	262 799	Total depreciation during year ² \$1,000..	31 177
Total cost of materials \$1,000..	1 210 649	Total rental payments ² \$1,000..	29 137
Cost of materials, parts, containers, etc., consumed \$1,000..	1 043 235	Buildings and other structures rental payments ² \$1,000..	18 957
Cost of resales \$1,000..	141 480	Machinery and equipment rental payments ² \$1,000..	10 180
Cost of fuels \$1,000..	3 048	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	2 077
Cost of purchased electricity \$1,000..	11 347	Response coverage ratio ⁴ percent..	78
Cost of contract work \$1,000..	11 539	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	8 728
Quantity of electricity purchased for heat and power 1,000 kWh..	173 287	Response coverage ratio ⁴ percent..	78
Quantity of electricity generated less sold for heat and power 1,000 kWh..	-	Cost of purchased communications services ³ \$1,000..	9 362
Total value of shipments \$1,000..	2 363 862	Response coverage ratio ⁴ percent..	78
Primary products value of shipments \$1,000..	2 144 233	Cost of purchased legal services ³ \$1,000..	1 919
Secondary products value of shipments \$1,000..	5 582	Response coverage ratio ⁴ percent..	78
Total miscellaneous receipts \$1,000..	214 047	Cost of purchased accounting and bookkeeping services ³ \$1,000..	798
Value of resales \$1,000..	203 659	Response coverage ratio ⁴ percent..	78
Contract receipts \$1,000..	7 901	Cost of purchased advertising services ³ \$1,000..	21 225
Other miscellaneous receipts \$1,000..	2 487	Response coverage ratio ⁴ percent..	78
Primary products specialization ratio percent..	99	Cost of purchased software and other data processing services ³ \$1,000..	3 155
Value of primary products shipments made in all industries \$1,000..	2 160 933	Response coverage ratio ⁴ percent..	78
Value of primary products shipments made in this industry \$1,000..	2 144 233	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	1 695
Value of primary products shipments made in other industries \$1,000..	16 700	Response coverage ratio ⁴ percent..	78
Coverage ratio percent..	99		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337920, BLIND & SHADE MFG												
All establishments	1	486	146	19 625	434 966	13 780	28 126	262 799	1 147 269	1 210 649	2 363 862	44 380
Establishments with 1 to 4 employees	9	191	—	432	8 533	324	535	5 671	18 351	22 070	41 436	718
Establishments with 5 to 9 employees	8	78	—	520	9 811	357	575	5 593	24 712	36 461	65 459	1 034
Establishments with 10 to 19 employees	2	71	—	979	19 732	631	1 102	10 428	40 484	42 444	83 148	1 053
Establishments with 20 to 49 employees	2	63	63	1 992	41 726	1 327	2 297	22 171	87 965	99 257	188 888	3 719
Establishments with 50 to 99 employees	2	33	33	2 322	45 841	1 626	3 103	26 241	88 313	111 835	201 672	4 297
Establishments with 100 to 249 employees	1	32	32	5 036	112 329	3 624	8 292	65 431	306 009	337 226	646 743	13 330
Establishments with 250 to 499 employees	1	13	13	4 287	100 563	3 039	6 427	62 273	294 114	319 522	609 629	11 455
Establishments with 500 to 999 employees	—	4	4	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	227	—	801	14 195	597	941	9 378	31 610	38 697	72 056	1 311

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
337920	Blind & shade mfg	486	19 625	434 966	13 780	28 126	262 799	1 147 269	1 210 649	2 363 862	44 380
3379201	Window shades and accessories	54	2 495	53 034	1 661	3 403	27 179	99 159	136 716	236 251	3 994
3379204	Venetian blinds	114	11 299	241 043	8 022	16 472	144 030	644 480	711 070	1 353 961	26 766
3379207	Other shades and blinds, nec, and curtain and drapery rods, poles, and fixtures	32	3 733	101 410	2 615	5 716	66 298	319 975	264 820	588 116	10 351

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
337920	Drapery hardware and blinds and shades	N	X	X	2 160 933	N	X	X	1 808 300
3379201	Window shades and accessories	N	X	X	370 197	N	X	X	296 112
33792011	Window shades and accessories	N	X	X	364 836	N	X	X	N
3379201111	Plastics window shades	37	X	X	73 599	25	X	X	52 556
3379201121	Window shades other than plastics, including cloth, paper, etc.	56	X	X	286 761	46	X	X	164 692
3379201131	Window shade accessories and rollers, sold separately	8	X	X	4 476	13	X	X	66 157
3379201Y	Window shades and accessories, nsk.	N	X	X	5 361	N	X	X	N
3379201YWV	Window shades and accessories, nsk.	N	X	X	5 361	N	X	X	12 707
3379204	Venetian blinds	N	X	X	1 100 660	N	X	X	891 761
33792041	Aluminum-slat venetian blinds, complete, vertical and horizontal	N	X	X	322 995	N	X	X	N
3379204111	Aluminum-slat venetian blinds, complete, vertical and horizontal	76	X	X	322 995	88	X	X	467 728
33792042	Venetian blinds other than aluminum-slat, complete, vertical and horizontal, including wood, plastics, steel, etc.	N	X	X	624 443	N	X	X	N
3379204211	Venetian blinds other than aluminum-slat, complete, vertical and horizontal, including wood, plastics, steel, etc.	77	X	X	624 443	66	X	X	286 201
33792043	Unassembled venetian blinds, parts and components, vertical and horizontal	N	X	X	132 570	N	X	X	N
3379204311	Unassembled venetian blinds, parts and components, vertical and horizontal	12	X	X	132 570	17	X	X	121 047
3379204Y	Venetian blinds, nsk	N	X	X	20 652	N	X	X	N
3379204YWV	Venetian blinds, nsk	N	X	X	20 652	N	X	X	16 785
3379207	Other shades and blinds, nec. and curtain and drapery rods, poles, and fixtures	N	X	X	494 210	N	X	X	395 439
33792071	Other shades and blinds, nec. and curtain and drapery rods, poles, and fixtures	N	X	X	487 429	N	X	X	N
3379207111	Other shades and blinds, except canvas and other textile fabrics, including wood, metal, plastics, chip, bamboo, rattan, reed, etc., nec.	41	X	X	122 907	34	X	X	50 565
3379207121	Curtain and drapery rods, poles, and fixtures, excluding window shade accessories	21	X	X	364 522	29	X	X	331 286
3379207Y	Other shades and blinds, nec. and curtain and drapery rods, poles, and fixtures, nsk	N	X	X	6 781	N	X	X	N
3379207YWV	Other shades and blinds, nec. and curtain and drapery rods, poles, and fixtures, nsk	N	X	X	6 781	N	X	X	13 588
337920W	Drapery hardware and blinds and shades, nsk, total	N	X	X	195 866	N	X	X	224 988
337920WY	Drapery hardware and blinds and shades, nsk	N	X	X	195 866	N	X	X	N
337920WYWWW	Drapery hardware and blinds and shades, nsk, for nonadministrative-record establishments	N	X	X	128 723	N	X	X	175 875
337920WYWY	Drapery hardware and blinds and shades, nsk, for administrative-record establishments	N	X	X	67 143	N	X	X	49 113

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3379201	WINDOW SHADES AND ACCESSORIES		
	United States	370 197	296 112
	California	89 394	104 687
	Florida	19 837	18 717
	Indiana	32 183	34 229
	New Jersey	7 253	12 112
	New York	3 632	N
	Pennsylvania.....	16 819	4 333
	Texas	22 530	5 830
3379204	VENETIAN BLINDS		
	United States	1 100 660	891 761
	Alabama	3 167	N
	California	272 199	211 691
	Florida	96 320	35 422
	Illinois	20 919	53 840
	Indiana	34 705	26 950
	Maryland	75 604	12 389
	Michigan	6 864	27 013
	New Jersey	48 708	40 585
	New York	12 126	9 184
	North Carolina.....	7 061	N
	Ohio	2 866	3 242
	Tennessee.....	19 631	12 485
	Texas	189 389	146 791
3379207	OTHER SHADES AND BLINDS, NEC, AND CURTAIN AND DRAPERY RODS, POLES, AND FIXTURES		
	United States	494 210	395 439
	California	19 728	21 080
	Florida	6 877	8 571
	Indiana	10 854	5 552
	New York	2 537	2 902
	Pennsylvania.....	36 545	16 503

Additional information is available for this item; see Appendix F.
 @ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
337920	BLIND & SHADE MFG				
33200005	Fabricated metal products, including forgings	X	64 794	X	43 805
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	39 264	X	44 631
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	47 818	X	D
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	66 166	X	57 267
31332003	Plastics coated fabrics and shade cloth	X	173 461	X	92 747
31499100	Cordage	X	18 121	X	D
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	101 557	X	43 219
32221001	Paperboard containers, boxes, and corrugated paperboard	X	27 545	X	23 427
00970099	All other materials and components, parts, containers, and supplies	X	180 385	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	324 124	X	304 380

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

337920 BLIND AND SHADE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing one or more of the following: venetian blinds, other window blinds, shades; curtain and drapery rods, poles; and/or curtain and drapery fixtures. The blinds, and shades may be made on a stock or custom basis and may be made of any material.

The data published with NAICS code 337920 include the following SIC industry:

2591 Drapery hardware, blinds, and shades

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3371101	24341	24341	3371227411	2511533	2511533	3371277	25992	25992
3371101111	2434111	2434111	3371227421	2511541	2511541	3371277111	2599231	2599231
3371101121	2434113	2434113	3371227431	2511561	2511561	3371277121	2599233	2599233
3371101YVW	2434100	2434100	3371227491	2511598	2511598	3371277131	2599236	2599236
3371104	24342	24342	3371227YVW	2511500	2511500	3371277141	2599247	2599247
3371104111	2434212	2434212	337122A	25116	25116	3371277191	2599248	2599248
3371104121	2434214	2434214	337122A111	2511611	2511611	3371277YVW	2599200	2599200
3371104YVW	2434200	2434200	337122A121	2511621	2511621	337127A pt	25994	25994
3371107	24343	24343	337122A131	2511631	2511631	337127A pt	39524 pt	39524 pt
3371107111	2434316	2434316	337122A141	2511698	2511698	337127A211	2599451	2599451
3371107121	2434318	2434318	337122AYVW	2511600	2511600	337127A221	3952411	3952413 pt
3371107YVW	2434300	2434300	337122E	25117	25117	337127A231	3952412	3952413 pt
337110A	25412 pt	25412 pt	337122E111	2511725	2511725	337127A241	3952413	3952413 pt
337110A111	2541211	2541200 pt	337122E121	2511748	2511748	337127A291	2599497	2599497
337110A121	2541212	2541200 pt	337122E131	2511763	2511763	337127AYVW pt	2599400	2599400
337110AYVW	2541200 pt	2541200 pt	337122E141	2511765	2511765	337127AYVW pt	3952400 pt	3952400 pt
337110E	25412 pt	25412 pt	337122E151	2511767	2511767	337127W pt	25310 pt	25310 pt
337110E111	2541213	2541200 pt	337122E161	2511775	2511775	337127W pt	25990 pt	25990 pt
337110E121	2541214	2541200 pt	337122E171	2511777	2511779 pt	337127W pt	39520 pt	39520 pt
337110EYVW	2541200 pt	2541200 pt	337122E181	2511781	2511779 pt	337127W pt	39990 pt	39990 pt
337110H	57121 pt	57120 pt	337122E191	2511783	2511779 pt	337127WYVW pt	2531000 pt	2531000 pt
337110H100	5712141	5712000 pt	337122EYVW	2511700	2511700	337127WYVW pt	2599000 pt	2599000 pt
337110W pt	24340	24340	337122W pt	25110	25110	337127WYVW pt	3952000 pt	3952000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	57120 pt	57120 pt	337127WYVW pt	3999000 pt	3999000 pt
337110W pt	25410 pt	25410 pt	337122WYVW pt	5712000 pt	5712000 pt	337127WYVW pt	2531002 pt	2531002 pt
337110WYVW pt	2434000	2434000	337122WYVW pt	5712002 pt	5712002 pt	337127WYVW pt	2599002 pt	2599002 pt
337110WYVW pt	2541000 pt	2541000 pt	337122YVW pt	5712002 pt	5712000 pt	337127WYVW pt	3952002 pt	3952002 pt
337110WYVW pt	5712000 pt	5712000 pt	3371241	25145	25145	337127WYVW pt	3999002 pt	3999002 pt
337110WYVW pt	2434002	2434002	3371241111	2514512	2514512	3371290	25170	25170
337110WYVW pt	2541002 pt	2541002 pt	3371241121	2514513	2514513	3371290111	2517015	2517015
337110WYVW pt	5712002 pt	5712000 pt	3371241131	2514515	2514515	3371290211	2517018	2517018
3371211	25120 pt	25120 pt	3371241141	2514517	2514517	3371290221	2517021	2517021
3371211 pt	57121 pt	57120 pt	3371241151	2514521	2514521	3371290YVW	2517000	2517000
3371211111	2512012	2512012	3371241161	2514527	2514527	3371290YVW	2517002	2517002
3371211121	2512041	2512041	3371241171	2514597	2514597	3372111	25212	25210 pt
3371211311	2512045	2512045	3371241YVW	2514500	2514500	3372111111	2521211	2521000 pt
3371211411	2512054	2512054	3371244	25146	25146	3372111121	2521213	2521000 pt
3371211511	2512031	2512031	3371244111	2514612	2514612	3372111131	2521214	2521000 pt
3371211521	2512035	2512035	3371244121	2514614	2514614	3372111141	2521217	2521000 pt
3371211531 pt	2512098	2512098	3371244221	2514622	2514622	3372111151	2521219	2521000 pt
3371211531 pt	5712121	5712000 pt	3371244231	2514624	2514624	3372111161	2521221	2521000 pt
3371211YVW pt	2512000 pt	2512000 pt	3371244241	2514698	2514698	3372111YVW	2521200	2521000 pt
3371211YVW pt	5712100 pt	5712000 pt	3371244YVW	2514600	2514600	3372114	25213	25210 pt
3371214	25155	25155	3371247	25147	25147	3372114111	2521311	2521000 pt
3371214100	2515500	2515500	3371247111	2514733	2514733	3372114121	2521313	2521000 pt
337121W pt	25120 pt	25120 pt	3371247121	2514737	2514737	3372114YVW	2521300	2521000 pt
337121W pt	25150 pt	25150 pt	3371247211	2514775	2514775	3372117	25214	25210 pt
337121W pt	57120 pt	57120 pt	3371247221	2514782	2514782	3372117111	2521411	2521000 pt
337121WYVW pt	2512000 pt	2512000 pt	3371247231	2514783	2514783	3372117211	2521413	2521000 pt
337121WYVW pt	2515000 pt	2515000 pt	3371247241	2514788	2514788	3372117311	2521415	2521000 pt
337121WYVW pt	5712000 pt	5712000 pt	3371247291 pt	2514789 pt	2514771	3372117321	2521417	2521000 pt
337121WYVW pt	2512002	2512002	3371247291 pt	2514789 pt	2514798	3372117331	2521419	2521000 pt
337121WYVW pt	2515002 pt	2515002 pt	3371247YVW	2514700	2514700	3372117341	2521425	2521000 pt
337121WYVW pt	5712002 pt	5712000 pt	337124W	25140	25140	3372117351	2521427	2521000 pt
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Laboratory Apparatus and Furniture Manufacturing

1997

Issued August 1999

EC97M-3391A

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Laboratory Apparatus and Furniture Manufacturing

1997

Issued August 1999

EC97M-3391A

1997 Economic Census

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339111	Laboratory apparatus & furniture mfg	373	384	16 833	616 819	9 148	18 203	247 964	1 291 434	909 818	2 213 702	58 880
382100	Laboratory apparatus & furniture	N	384	16 833	616 819	9 148	18 203	247 964	1 291 434	909 818	2 213 702	58 880

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339111, LABORATORY APPARATUS & FURNITURE MFG												
United States	-	384	152	16 833	616 819	9 148	18 203	247 964	1 291 434	909 818	2 213 702	58 880
California	-	68	31	3 058	123 119	1 406	2 746	41 083	279 502	182 090	468 524	17 522
Colorado	-	7	2	244	7 314	157	311	2 720	18 527	9 765	28 403	689
Florida	3	13	4	140	4 799	81	158	1 844	13 005	7 571	20 758	254
Illinois	-	20	7	845	32 183	432	897	11 446	48 551	54 559	104 924	3 143
Indiana	4	8	3	135	4 376	64	132	1 504	12 327	4 674	16 727	281
Maryland	1	15	5	187	8 047	100	192	2 862	17 885	8 997	26 884	819
Massachusetts	-	26	11	910	37 917	360	688	10 531	70 483	61 831	133 988	4 534
Michigan	-	15	11	823	25 848	485	1 006	12 823	53 512	29 556	82 799	767
Minnesota	-	8	4	445	17 863	292	684	8 453	52 129	27 641	79 361	282
Missouri	-	7	1	199	8 153	73	158	2 105	13 766	6 359	19 939	359
New Jersey	-	23	10	1 477	50 771	804	1 465	18 314	115 198	52 660	166 172	4 260
New York	2	23	13	1 104	40 286	568	1 067	12 923	82 156	46 529	126 436	3 775
North Carolina	-	8	2	587	21 491	375	731	9 142	19 726	47 186	66 211	1 216
Ohio	-	17	7	956	37 819	502	1 043	16 099	89 845	55 529	143 906	3 668
Oregon	1	6	1	178	4 947	143	265	3 125	10 951	7 710	18 663	86
Pennsylvania	-	35	16	1 874	69 665	1 035	2 034	31 381	134 295	77 604	220 993	6 530
Texas	2	15	4	276	10 079	176	325	4 128	19 547	16 579	36 345	571
Wisconsin	-	12	5	1 156	39 273	765	1 479	22 968	74 501	60 000	134 744	1 871

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339111, LABORATORY APPARATUS & FURNITURE MFG		339111, LABORATORY APPARATUS & FURNITURE MFG—Con.	
Companies ¹	number.. 373	Value added	\$1,000.. 1 291 434
All establishments	number.. 384	Total inventories, beginning of year	\$1,000.. 384 688
Establishments with 1 to 19 employees	number.. 232	Finished goods inventories, beginning of year	\$1,000.. 123 123
Establishments with 20 to 99 employees	number.. 117	Work-in-process inventories, beginning of year	\$1,000.. 99 185
Establishments with 100 employees or more	number.. 35	Materials and supplies inventories, beginning of year	\$1,000.. 162 380
All employees	number.. 16 833	Total inventories, end of year	\$1,000.. 413 938
Total compensation ²	\$1,000.. 763 393	Finished goods inventories, end of year	\$1,000.. 122 696
Annual payroll	\$1,000.. 616 819	Work-in-process inventories, end of year	\$1,000.. 87 162
Total fringe benefits	\$1,000.. 146 574	Materials and supplies inventories, end of year	\$1,000.. 204 080
Production workers, average for year	number.. 9 148	Gross book value of total assets at beginning of year	\$1,000.. 608 975
Production workers on March 12	number.. 9 120	Total capital expenditures (new and used)	\$1,000.. 58 880
Production workers on May 12	number.. 9 121	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 11 252
Production workers on August 12	number.. 9 151	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 47 628
Production workers on November 12	number.. 9 200	Total retirements ²	\$1,000.. 27 737
Production-worker hours	1,000.. 18 203	Gross book value of total assets at end of year	\$1,000.. 640 118
Production-worker wages	\$1,000.. 247 964	Total depreciation during year ²	\$1,000.. 50 995
Total cost of materials	\$1,000.. 909 818	Total rental payments ²	\$1,000.. 30 122
Cost of materials, parts, containers, etc., consumed	\$1,000.. 768 088	Buildings and other structures rental payments ²	\$1,000.. 19 358
Cost of resales	\$1,000.. 92 798	Machinery and equipment rental payments ²	\$1,000.. 10 764
Cost of fuels	\$1,000.. 4 863	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 5 705
Cost of purchased electricity	\$1,000.. 13 248	Response coverage ratio ⁴	percent.. 81
Cost of contract work	\$1,000.. 30 821	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 8 087
Quantity of electricity purchased for heat and power	1,000 kWh.. 199 164	Response coverage ratio ⁴	percent.. 81
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 10 812
Total value of shipments	\$1,000.. 2 213 702	Response coverage ratio ⁴	percent.. 81
Primary products value of shipments	\$1,000.. 1 937 972	Cost of purchased legal services ³	\$1,000.. 5 942
Secondary products value of shipments	\$1,000.. 121 167	Response coverage ratio ⁴	percent.. 81
Total miscellaneous receipts	\$1,000.. 154 563	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 3 587
Value of resales	\$1,000.. 134 205	Response coverage ratio ⁴	percent.. 81
Contract receipts	\$1,000.. 4 255	Cost of purchased advertising services ³	\$1,000.. 14 278
Other miscellaneous receipts	\$1,000.. 16 103	Response coverage ratio ⁴	percent.. 81
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³	\$1,000.. 6 438
Value of primary products shipments made in all industries	\$1,000.. 2 075 642	Response coverage ratio ⁴	percent.. 81
Value of primary products shipments made in this industry	\$1,000.. 1 937 972	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 482
Value of primary products shipments made in other industries	\$1,000.. 137 670	Response coverage ratio ⁴	percent.. 81
Coverage ratio	percent.. 93		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339111. LABORATORY APPARATUS & FURNITURE MFG												
All establishments	-	384	152	16 833	616 819	9 148	18 203	247 964	1 291 434	909 818	2 213 702	58 880
Establishments with 1 to 4 employees	8	95	-	185	5 609	116	171	2 164	15 107	9 579	24 775	553
Establishments with 5 to 9 employees	8	69	-	481	16 570	268	467	6 397	39 161	25 536	64 741	1 391
Establishments with 10 to 19 employees	4	68	-	957	34 479	474	845	12 538	74 202	45 871	119 660	2 091
Establishments with 20 to 49 employees	-	83	83	2 409	89 404	1 378	2 738	37 388	212 559	120 922	330 792	5 941
Establishments with 50 to 99 employees	-	34	34	2 518	94 802	1 356	2 666	36 011	194 369	140 037	332 115	13 078
Establishments with 100 to 249 employees	-	18	18	2 866	96 376	1 585	3 279	37 848	167 374	153 315	321 284	7 634
Establishments with 250 to 499 employees	-	14	14	5 158	195 178	2 717	5 334	73 214	429 722	316 404	750 053	22 470
Establishments with 500 to 999 employees	-	3	3	2 259	84 401	1 254	2 703	42 404	158 940	98 154	270 282	5 722
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	154	-	767	21 796	406	635	8 218	55 381	37 359	93 145	2 332

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339111	Laboratory apparatus & furniture mfg	384	16 833	616 819	9 148	18 203	247 964	1 291 434	909 818	2 213 702	58 880

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339111	Laboratory apparatus and furniture	N	X	X	2 075 642	N	X	X	1 845 526
3391110	Laboratory apparatus and furniture @	N	X	X	2 075 642	N	X	X	1 845 526
33911101	Laboratory and scientific apparatus	N	X	X	1 698 509	N	X	X	N
3391110110	Laboratory and scientific apparatus	236	X	X	1 698 509	217	X	X	1 409 395
33911102	Laboratory furniture and parts sold separately	N	X	X	231 593	N	X	X	N
3391110230	Laboratory furniture and parts sold separately	32	X	X	231 593	33	X	X	289 018
3391110Y	Laboratory apparatus and furniture, nsk, total	N	X	X	145 540	N	X	X	N
3391110YWW	Laboratory apparatus and furniture, nsk, for nonadministrative-record establishments	N	X	X	59 127	N	X	X	114 161
3391110YWY	Laboratory apparatus and furniture, nsk, for administrative-record establishments	N	X	X	86 413	N	X	X	32 952

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339111	LABORATORY APPARATUS & FURNITURE MFG				
33441200	Printed circuit boards (without inserted components) for electronic circuitry	X	9 183	X	14 771
001900C4	Printed circuit assemblies, loaded boards or modules (printed circuit boards with inserted electronic components)	X	36 673	X	29 789
33441300	Semiconductors, including transistors, diodes, rectifiers, and integrated circuits for electronic circuitry	X	13 630	X	7 538
33441400	Capacitors for electronic circuitry	X	2 236	X	1 848
33441500	Resistors for electronic circuitry	X	6 681	X	1 570
001900D3	Other components and accessories for electronic circuitry, n.e.c., except tubes	X	12 314	X	8 817
33593101	Current-carrying wiring devices	X	15 468	X	8 766
001900B1	Electrical transmission, distribution, and control equipment	X	17 651	X	1 618
33410001	Electronic computing equipment	X	5 623	X	4 280
33451501	Electrical instrument mechanisms and meter movements (including instrument relays)	X	8 298	X	3 573
33451503	Electrical measuring instruments and parts, not listed elsewhere	X	6 976	X	1 474
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	21 970	X	9 196
32610007	Fabricated plastics products (except gaskets, hoses, and belting)	X	18 988	X	11 755
332000A9	Sheet metal products, except stampings	X	54 544	X	49 142
332000AC	Metal stampings	X	4 395	X	1 348
332000AE	Other fabricated metal products (except forgings)	X	42 506	X	N
33210001	Forgings	X	13 401	X	D
33100035	Castings (rough and semifinished)	X	9 883	X	N
33100033	Metal shapes and forms, except castings, forgings, and fabricated metal products	X	24 487	X	N
32720003	Glass and glass products (excluding windows and mirrors)	X	15 771	X	8 742
00970099	All other materials and components, parts, containers, and supplies	X	250 976	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	176 434	X	D

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339111 LABORATORY APPARATUS AND FURNITURE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing laboratory apparatus and laboratory and hospital furniture (except dental). Examples of products made by these establishments are hospital beds, operating room tables, laboratory balances and scales, furnaces, ovens, centrifuges, cabinets, cases, benches, tables, and stools.

The data published with NAICS code 339111 include the following SIC industry:

3821 Laboratory apparatus and furniture

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339111 do not include establishments primarily engaged in the manufacture of hospital beds or operating tables. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Part 1. **Products Statistics (Tables 6a and 6b)**

NAICS product code	Footnote
@3391110	For additional detail, see Current Industrial Report MA334B, Measurement Instruments and Related Products.

Part 2. **Materials Consumed by Kind (Table 7)**

Not applicable.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	38430	38430	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3699000 pt.	3699000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3843000	3843000	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	339114WYWW pt.	3699002 pt.	3699002 pt	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	339114WYWW pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWW	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWW	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWW	3851400	3851400	3399123YWW pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWW	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWW	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWW	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
			3391160	80720	80720	339913W	39150	39150
3391131574	3842183	3842183	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072000 pt.	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160YWW	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWW	8072002	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160YWW	8072002	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWW	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131598	3842198	3842198	3399111	39111	39111	3399140 pt.	39610	39610
3391131YWW	3842100 pt.	3842100 pt	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
			3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135	38423	38423	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135101	3842311	3842311	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135106	3842321	3842321	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135111	3842322	3842322	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135116	3842351	3842351	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135121	3842361	3842361	3399111YWW	3911100	3911100	3399140221	3961072	3961072
3391135126	3842373	3842373				3399140226 pt.	3479026	3479021 pt
3391135YWW	3842300	3842300	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
			3399113101	3911311	3911311			
3391137	25991	25991	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
3391137100	2599100	2599100	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113W pt.	25990 pt.	25990 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3499800 pt.	3499800 pt
			3399113YWW	3911300	3911300	3399140YWW pt.	3961000	3961000
339113W pt.	38420 pt.	38420 pt				3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3499002 pt.	3499002 pt
339113WYWW pt.	3842000 pt.	3842000 pt				3399140YWW pt.	3961002	3961002
339113WYWW pt.	2599002 pt.	2599002 pt						
339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399323566	3944443	3944443			
3399201YVW	3949100	3949100	3399323YVW	3944400	3944400			
			3399325	39445	39445	3399503	39932	39932
3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203206	3949241	3949241	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203311	3949245	3949245	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203416	3949247	3949247	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203421	3949298	3949298	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203YVW	3949200	3949200	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
			3399325236	3944530	3944530	3399503106 pt	3993203 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301				3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302						
3399205YVW	3949300	3949300						
			3399327	39446	39446	3399503111 pt	3993205 pt	3993278 pt
3399207	39494	39494	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207101	3949401	3949401	3399327101 pt	3944615 pt	3944618	3399503116 pt	3993207 pt	3993252 pt
3399207111	3949411	3949402 pt	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993272 pt
3399207121	3949421	3949406 pt	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993276 pt
3399207131	3949431 pt	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949403	3399327221	3944629	3944629	3399503121 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949406 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993278 pt
3399207141	3949441	3949406 pt	3399327YVW	3944600	3944600	3399503126 pt	3993211 pt	3993252 pt
3399207151	3949451	3949406 pt				3399503126 pt	3993211 pt	3993272 pt
3399207199 pt	3949499 pt	3949404	3399329	39447	39447	3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949405	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503YVW	3993200	3993200
3399207YVW	3949400	3949400	3399329100 pt	3944718 pt	3944716			
			3399329100 pt	3944718 pt	3944716			
3399209	39495	39495	339932W	39440 pt	39440 pt	3399505	39933	39933
3399209101	3949511	3949511	339932WYVW	3944000 pt	3944000 pt	3399505101	3993311	3993300 pt
3399209106	3949515	3949515	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
3399209111	3949527	3949527				3399505YVW	3993300	3993300 pt
3399209116	3949528	3949528	3399411	39511	39511			
339920911A	3949569	3949569	3399411101	3951102	3951102	339950W	39930	39930
339920911F	3949575	3949575	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911K	3949577	3949577	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911P	3949581	3949593 pt	3399411YVW	3951100	3951100			
339920911U	3949592	3949592	3399413	39512	39512	3399911	30534	30534
339920911Y	3949583	3949593 pt	3399413101	3951202	3951202	3399911111	3053415	3053415
			3399413206	3951206	3951206	3399911121 pt	3053419 pt	3053411
3399209121	3949530	3949530	3399413YVW	3951200	3951200	3399911121 pt	3053419 pt	3053418
3399209126	3949536	3949536				3399911YVW	3053400	3053400
339920912A	3949596	3949596	3399415	39513	39513			
339920912F	3949594	3949594	3399415101	3951305	3951305	3399913	30535	30535
339920912K	3949595	3949595	3399415106	3951310	3951310	3399913111	3053515	3053515
339920912P	3949597	3949597	3399415111	3951313	3951313	3399913221	3053524	3053531 pt
339920912U	3949599 pt	3949599	3399415116	3951325	3951325	3399913331	3053517	3053517
339920912U pt	3949599 pt	3949599	3399415YVW	3951300	3951300	3399913341	3053519	3053519
3399209131	3949537	3949537				3399913351 pt	3053529 pt	3053511
3399209136	3949538	3949538	339941W	39510	39510	3399913351 pt	3053529 pt	3053513
			339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053521
3399209141	3949539	3949539	339941WYVW	3951002	3951002	3399913351 pt	3053529 pt	3053531 pt
3399209146	3949541	3949541	3399421 pt	25311 pt	25311 pt	3399913YVW	3053500	3053500
3399209151	3949551	3949551						
3399209156 pt	3949561 pt	3949564	3399421	39523	39523	3399915	30536	30536
3399209156 pt	3949561 pt	3949586	3399421101	3952310	3952310	3399915111	3053621	3053621
3399209161	3949591	3949591	3399421106	3952313	3952313	3399915221	3053622	3053622
3399209166	3949585	3949585	3399421111	3952322	3952322	3399915231	3053625	3053625
3399209171	3949572	3949553 pt	3399421316	2531191 pt	2531198 pt	3399915241	3053626	3053626
3399209176	3949574	3949553 pt	3399421YVW pt	2531100 pt	2531100 pt	3399915251	3053630	3053630
3399209181	3949576	3949553 pt	3399421YVW pt	3952300	3952300	3399915261	3053635	3053635
						3399915YVW	3053600	3053600
3399209186	3949556	3949556	3399423	39524 pt	39524 pt			
3399209191	3949571	3949571 pt	3399423101	3952414	3952413 pt	3399917	30537	30537
3399209193	3949565	3949571 pt	3399423206	3952421	3952419 pt	3399917111	3053729	3053729
3399209196	3949570	3949570 pt	3399423YVW	3952400 pt	3952400 pt	3399917121	3053748	3053748
3399209YVW	3949500	3949500				3399917YVW	3053700	3053700
			3399425	35799 pt	35799 pt			
339920W	39490	39490	3399425000 pt	3579900 pt	3579900 pt	3399918	30538	30538
339920WYVW	3949000	3949000	3399425000 pt	3579930	3579930 pt	3399918111	3053810	3053810
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			33					

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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339993WYWWW pt.....	3131000 pt.....	3131000 pt.....	3399955100 pt.....	3995300 pt.....	3995300.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
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Surgical and Medical Instrument Manufacturing

1997

Issued August 1999

EC97M-3391B

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Surgical and Medical Instrument Manufacturing

1997

Issued August 1999

EC97M-3391B

1997 Economic Census

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Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339112	Surgical & medical instrument mfg	1 454	1 591	104 120	3 971 762	62 494	124 182	1 580 017	12 931 823	5 108 043	18 026 917	696 956
382920	Measuring & controlling devices, n.e.c. (pt)	N	3	99	2 325	81	177	1 382	4 510	4 259	8 757	44
384100	Surgical & medical instruments	N	1 588	104 021	3 969 437	62 413	124 005	1 578 635	12 927 313	5 103 784	18 018 160	696 912

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339112, SURGICAL & MEDICAL INSTRUMENT MFG												
United States	1	1 591	591	104 120	3 971 762	62 494	124 182	1 580 017	12 931 823	5 108 043	18 026 917	696 956
Arizona	1	17	9	963	36 273	313	477	5 452	127 938	23 313	138 776	3 144
California	1	325	113	17 322	795 141	8 308	16 363	232 477	2 489 482	922 281	3 382 468	138 787
Colorado	1	46	13	2 407	110 831	1 699	4 062	32 757	262 898	105 831	390 328	12 304
Connecticut	-	47	24	5 698	219 674	4 058	7 582	117 954	1 376 470	316 943	1 683 576	77 294
Florida	-	85	24	6 642	243 251	3 878	7 827	85 956	1 253 509	228 159	1 479 218	37 008
Georgia	-	19	5	1 167	56 429	491	866	10 871	181 756	158 548	349 854	3 581
Illinois	2	59	21	1 704	60 501	1 116	2 324	27 752	140 605	83 884	223 549	7 213
Indiana	-	43	14	3 330	106 794	2 504	5 286	63 033	359 694	137 337	495 463	12 598
Iowa	1	11	2	120	3 902	57	104	1 009	11 136	6 334	17 475	767
Kentucky	4	12	-	105	3 169	72	97	1 395	11 797	4 968	16 626	602
Maryland	2	31	7	818	29 208	567	1 035	14 980	52 920	52 629	102 547	12 180
Massachusetts	1	110	52	7 486	332 990	3 911	7 697	96 215	838 183	407 288	1 256 804	53 473
Michigan	-	37	13	1 555	55 204	902	1 835	21 365	164 823	59 962	224 274	12 839
Minnesota	1	79	32	9 039	381 812	4 727	9 754	138 236	879 264	340 838	1 227 556	56 190
Missouri	-	32	16	2 544	91 134	1 428	2 981	39 037	290 315	157 455	446 979	12 971
Nevada	2	10	1	128	4 688	70	138	1 792	10 741	6 341	17 305	643
New Hampshire	2	18	8	1 205	37 180	673	1 197	18 849	88 659	48 067	140 276	14 679
New Jersey	1	58	27	2 110	85 825	1 269	2 440	33 136	253 490	100 313	350 681	17 931
New York	1	79	33	8 524	273 169	5 156	9 843	111 818	568 198	330 464	902 414	35 578
North Carolina	-	28	15	2 672	80 648	2 242	4 597	48 415	359 247	172 211	536 075	16 538
Ohio	3	51	21	2 615	87 235	1 657	3 026	37 763	279 947	128 161	407 989	15 732
Oklahoma	1	8	3	319	9 050	218	467	5 203	18 030	12 040	30 476	653
Oregon	4	19	5	303	9 186	176	714	3 533	29 567	9 023	38 727	1 624
Pennsylvania	1	94	37	6 537	222 132	4 000	7 609	104 962	576 969	212 390	772 566	30 105
South Carolina	3	8	5	733	18 592	543	1 015	10 903	35 347	23 085	58 413	3 568
Tennessee	-	23	8	784	34 809	515	870	16 199	162 084	96 668	259 992	9 594
Texas	1	70	22	3 886	131 507	2 683	5 195	67 745	445 008	234 230	672 500	18 877
Utah	-	25	15	3 559	129 323	2 140	4 940	44 546	385 573	107 369	481 654	31 565
Virginia	-	12	4	757	24 026	631	1 175	19 560	97 632	55 826	154 108	4 561
Washington	2	33	10	971	45 668	493	883	16 436	114 381	60 342	174 490	9 428
Wisconsin	-	33	13	1 952	82 138	1 180	2 484	36 898	103 614	83 862	201 677	13 149

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339112, SURGICAL & MEDICAL INSTRUMENT MFG		339112, SURGICAL & MEDICAL INSTRUMENT MFG	
— Con.		— Con.	
Companies ¹	number.. 1 454	Value added	\$1,000.. 12 931 823
All establishments	number.. 1 591	Total inventories, beginning of year	\$1,000.. 2 386 785
Establishments with 1 to 19 employees	number.. 1 000	Finished goods inventories, beginning of year	\$1,000.. 967 348
Establishments with 20 to 99 employees	number.. 380	Work-in-process inventories, beginning of year	\$1,000.. 566 470
Establishments with 100 employees or more	number.. 211	Materials and supplies inventories, beginning of year	\$1,000.. 852 967
All employees	number.. 104 120	Total inventories, end of year	\$1,000.. 2 489 123
Total compensation ²	\$1,000.. 4 943 794	Finished goods inventories, end of year	\$1,000.. 1 047 406
Annual payroll	\$1,000.. 3 971 762	Work-in-process inventories, end of year	\$1,000.. 499 361
Total fringe benefits	\$1,000.. 972 032	Materials and supplies inventories, end of year	\$1,000.. 942 356
Production workers, average for year	number.. 62 494	Gross book value of total assets at beginning of year	\$1,000.. 4 987 114
Production workers on March 15	number.. 61 659	Total capital expenditures (new and used)	\$1,000.. 696 956
Production workers on May 15	number.. 62 235	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 143 236
Production workers on August 15	number.. 62 737	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 553 720
Production workers on November 15	number.. 63 345	Total retirements ²	\$1,000.. 244 814
Production-worker hours	\$1,000.. 124 182	Gross book value of total assets at end of year	\$1,000.. 5 439 256
Production-worker wages	\$1,000.. 1 580 017	Total depreciation during year ²	\$1,000.. 493 083
Total cost of materials	\$1,000.. 5 108 043	Total rental payments ²	\$1,000.. 153 911
Cost of materials, parts, containers, etc., consumed	\$1,000.. 4 316 165	Buildings and other structures rental payments ²	\$1,000.. 93 518
Cost of resales	\$1,000.. 499 269	Machinery and equipment rental payments ²	\$1,000.. 60 393
Cost of fuels	\$1,000.. 17 207	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 23 454
Cost of purchased electricity	\$1,000.. 105 487	Response coverage ratio ⁴	percent.. 69
Cost of contract work	\$1,000.. 169 915	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 68 937
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 660 458	Response coverage ratio ⁴	percent.. 69
Quantity of electricity generated less sold for heat and power	1,000 kWh.. S	Cost of purchased communications services ³	\$1,000.. 44 371
Total value of shipments	\$1,000.. 18 026 917	Response coverage ratio ⁴	percent.. 69
Primary products value of shipments	\$1,000.. 16 096 038	Cost of purchased legal services ³	\$1,000.. 75 245
Secondary products value of shipments	\$1,000.. 812 792	Response coverage ratio ⁴	percent.. 69
Total miscellaneous receipts	\$1,000.. 1 118 087	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 28 747
Value of resales	\$1,000.. 996 333	Response coverage ratio ⁴	percent.. 69
Contract receipts	\$1,000.. 58 995	Cost of purchased advertising services ³	\$1,000.. 51 952
Other miscellaneous receipts	\$1,000.. 62 759	Response coverage ratio ⁴	percent.. 69
Primary products specialization ratio	percent.. 95	Cost of purchased software and other data processing services ³	\$1,000.. 19 192
Value of primary products shipments made in all industries	\$1,000.. 17 277 958	Response coverage ratio ⁴	percent.. 69
Value of primary products shipments made in this industry	\$1,000.. 16 096 038	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 6 437
Value of primary products shipments made in other industries	\$1,000.. 1 181 920	Response coverage ratio ⁴	percent.. 69
Coverage ratio	percent.. 93		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339112, SURGICAL & MEDICAL INSTRUMENT MFG												
All establishments	1	1 591	591	104 120	3 971 762	62 494	124 182	1 580 017	12 931 823	5 108 043	18 026 917	696 956
Establishments with 1 to 4 employees	9	445	—	911	34 555	682	1 422	16 071	73 972	36 826	113 712	6 023
Establishments with 5 to 9 employees	9	294	—	1 963	65 847	1 246	2 023	29 282	161 165	78 193	241 036	12 238
Establishments with 10 to 19 employees	7	261	—	3 511	119 216	2 219	3 575	52 296	274 579	127 996	403 931	19 535
Establishments with 20 to 49 employees	3	250	250	7 785	279 701	4 796	8 752	118 613	658 307	297 215	942 510	40 344
Establishments with 50 to 99 employees	2	130	130	9 111	350 975	5 315	10 360	133 800	778 113	399 194	1 178 724	58 542
Establishments with 100 to 249 employees	1	105	105	15 984	605 426	9 498	19 001	248 126	1 608 342	764 574	2 369 644	105 089
Establishments with 250 to 499 employees	—	60	60	21 108	827 142	12 411	24 281	330 901	2 294 375	1 175 381	3 466 875	162 690
Establishments with 500 to 999 employees	—	32	32	21 501	808 450	12 680	26 320	324 396	2 780 922	1 080 185	3 857 414	157 271
Establishments with 1,000 to 2,499 employees	—	13	13	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	1	1	D	D	D	D	D	D	D	D	D
Administrative records ²	9	820	—	5 201	149 058	3 398	4 852	66 186	367 205	177 244	548 530	27 134

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339112	Surgical & medical instrument mfg	1 591	104 120	3 971 762	62 494	124 182	1 580 017	12 931 823	5 108 043	18 026 917	696 956
3391121	Surgical and medical instruments and apparatus	533	89 327	3 451 691	53 351	108 973	1 362 870	11 734 921	4 499 827	16 224 905	607 775
3391123	Hospital furniture	33	3 664	147 019	2 000	4 012	49 986	341 325	207 883	550 947	24 032

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339112	Surgical and medical instruments	N	X	X	17 277 958	N	X	X	N
3391121	Surgical and medical instruments and apparatus	N	X	X	15 475 887	N	X	X	N
33911211	Surgical, medical, and orthopedic instruments	N	X	X	2 972 485	N	X	X	N
3391121101	Surgical and medical instruments, including suture needles, eye, ear, nose, and throat instruments	100	X	X	2 505 639	86	X	X	2 174 219
3391121106	Orthopedic instruments, excluding eye, ear, nose, and throat instruments	36	X	X	466 846	39	X	X	307 123
33911212	Diagnostic apparatus including metabolism, blood pressure, and optical	N	X	X	2 013 684	N	X	X	N
3391121211	Metabolism and blood pressure diagnostic apparatus	16	X	X	156 152	24	X	X	246 178
3391121216	Other diagnostic apparatus, including optical diagnostic apparatus	61	X	X	1 857 532	63	X	X	1 122 456
33911213	Surgical and medical syringes and hypodermic needles	N	X	X	1 027 062	N	X	X	N
3391121321	Surgical and medical syringes	15	X	X	800 971	20	X	3 880.5	696 658
3391121326	Surgical and medical hypodermic needles	12	X	X	226 091	16	X	3 828.7	215 401
33911214	Surgical and medical blood transfusion, IV equipment, and donor kits	N	X	X	580 997	N	X	X	N
3391121431	Surgical and medical blood transfusion, IV equipment, and donor kits	40	X	X	580 997	41	X	X	833 103
33911215	Surgical and medical catheters	N	X	X	3 277 139	N	X	X	N
3391121536	Surgical and medical catheters	78	X	X	3 277 139	73	X	X	2 001 124
33911216	Other surgical and medical instruments	N	X	X	4 670 653	N	X	X	N
3391121641	Surgical and medical anesthesia apparatus and instruments	26	X	X	378 496	22	X	X	446 314
3391121646	Surgical and medical bone plates, screws, and nails, and other internal fixation devices or appliances	26	X	X	662 160	24	X	X	400 009
3391121651	Surgical and medical mechanical therapy appliances	14	X	X	140 602	16	X	X	221 657
3391121656	Medical thermometers	6	X	X	19 772	N	X	X	N
3391121661	Other surgical and medical instruments	187	X	X	3 469 623	193	X	X	2 251 399
33911217	Parts for surgical and medical instruments and apparatus	N	X	X	616 858	N	X	X	N
3391121766	Parts for surgical and medical instruments and apparatus	81	X	X	616 858	94	X	X	501 680
3391121Y	Surgical and medical instruments and apparatus, nsk	N	X	X	317 009	N	X	X	N
3391121YWV	Surgical and medical instruments and apparatus, nsk	N	X	X	317 009	N	X	X	N
3391123	Hospital furniture	N	X	X	508 732	N	X	X	415 799
33911231	Hospital furniture	N	X	X	508 732	N	X	X	N
3391123106	Operating room furniture, including tables, cases, cabinets, etc.	16	X	X	161 761	19	X	X	147 259
3391123111	Patient room furniture, including cabinets, overbed tables, desks, dressers, etc., but excluding beds and chairs	16	X	X	138 951	15	X	X	137 187
3391123116	Other hospital furniture, excluding operating and patient room furniture, beds, and instruments	34	X	X	208 020	45	X	X	121 163
3391123Y	Hospital furniture, nsk	N	X	X	-	N	X	X	N
3391123YWV	Hospital furniture, nsk	N	X	X	-	N	X	X	10 190
339112W	Surgical and medical instrument manufacturing, nsk, total	N	X	X	1 293 339	N	X	X	N
339112WY	Surgical and medical instrument manufacturing, nsk, total	N	X	X	1 293 339	N	X	X	N
339112WYWW	Surgical and medical instrument manufacturing, nsk, for nonadministrative-record establishments	N	X	X	778 364	N	X	X	N
339112WYWY	Surgical and medical instrument manufacturing, nsk, for administrative-record establishments	N	X	X	514 975	N	X	X	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3391121	SURGICAL AND MEDICAL INSTRUMENTS AND APPARATUS		
	United States	15 475 887	N
	Arizona	111 617	N
	California	2 949 668	N
	Colorado	338 408	N
	Connecticut	1 267 115	N
	Florida	1 312 738	N
	Georgia	295 363	N
	Illinois	142 277	N
	Indiana	594 654	N
	Kentucky	10 699	N
	Maryland	76 630	N
	Massachusetts	1 090 780	N
	Michigan	219 502	N
	Minnesota	1 069 192	N
	Missouri	219 050	N
	Nevada	11 706	N
	New Hampshire	126 075	N
	New Jersey	275 804	N
	New York	712 021	N
	North Carolina	513 235	N
	Ohio	265 117	N
	Oklahoma	25 295	N
	Oregon	25 089	N
	Pennsylvania	617 149	N
	South Carolina	65 216	N
	Tennessee	310 256	N
	Texas	652 084	N
	Utah	495 311	N
	Virginia	122 041	N
	Washington	149 194	N
	Wisconsin	157 726	N
3391123	HOSPITAL FURNITURE		
	United States	508 732	415 799
	Indiana	11 916	N
	Michigan	16 885	N
	New Jersey	19 843	13 500
	Ohio	82 280	110 828
	Pennsylvania	19 955	16 832
	Washington	10 322	N
	Wisconsin	26 857	22 496

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339112	SURGICAL & MEDICAL INSTRUMENT MFG				
33910000	Surgical and orthopedic supplies, including sutures and hypodermic needles for further manufacture or assembly	X	632 932	X	474 875
001900B7	Resistors, capacitors, transformers, electron tubes, semiconductors, and other electronic components	X	266 784	X	178 783
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products	X	66 428	X	64 822
33200095	Other fabricated metal products (except forgings)	X	346 391	X	135 696
33211101	Iron and steel forgings	X	15 426	X	16 633
33211201	Nonferrous forgings	X	3 084	X	2 083
33151001	Iron and steel castings (rough and semifinished)	X	5 651	X	18 356
33152011	Nonferrous (aluminum, copper, etc.) castings (rough and semifinished)	X	11 993	X	7 335
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	81 093	X	48 803
331000AJ	Nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	25 081	X	23 109
31323001	Nonwoven fabrics	X	17 445	X	5 505
31321025	Broadwoven fabrics	X	19 328	X	13 282
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	190 356	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	205 721	X	146 471
32610009	Fabricated plastics products	X	420 052	X	261 087

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339112	SURGICAL & MEDICAL INSTRUMENT MFG—Con.				
32600017	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	X	59 990	X	56 250
32552001	Adhesives and sealants	X	10 807	X	5 620
32720007	Glass and glass products, except photographic and projection lenses and prisms	X	14 262	X	17 614
32221001	Paperboard containers, boxes, and corrugated paperboard	X	128 967	X	79 243
32210015	Paper and paperboard products except paperboard boxes, containers, and corrugated paperboard	X	45 591	X	48 085
00970099	All other materials and components, parts, containers, and supplies	X	567 913	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 180 870	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339112 SURGICAL AND MEDICAL INSTRUMENT MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing medical, surgical, ophthalmic, and veterinary instruments and apparatus (except electrotherapeutic, electromedical and irradiation apparatus). Examples of products made by these establishments are

syringes, hypodermic needles, anesthesia apparatus, blood transfusion equipment, catheters, surgical clamps, and medical thermometers.

The data published with NAICS code 339112 include the following SIC industries:

3829 Measuring and controlling devices, n.e.c. (pt)
3841 Surgical and medical instruments

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399927.....	39314.....	39314.....	3399941 pt.....	39911.....	39911.....	339995W.....	39950.....	39950.....
3399927116 pt.....	3931437 pt.....	3931450.....	3399941101.....	3991113.....	3991113.....	339995WYWWW.....	3995000.....	3995000.....
3399927116 pt.....	3931437 pt.....	3931452.....	3399941106.....	3991198.....	3991198.....	339995WYWY.....	3995002.....	3995002.....
3399927201.....	3931413.....	3931413.....	3399941311.....	2392471.....	2392471.....			
3399927206.....	3931415.....	3931415.....	3399941316.....	2392473.....	2392473.....	3399991.....	39991.....	39991.....
3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
3399927221.....	3931488.....	3931488.....	3399941YVW pt.....	2392400 pt.....	2392400 pt.....	3399991106.....	3999117.....	3999117.....
3399927226.....	3931498.....	3931498.....	3399941YVW pt.....	3991100.....	3991100.....	3399991111.....	3999140.....	3999140.....
3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
3399927YVW.....	3931400.....	3931400.....	3399943.....	39912.....	39912.....	3399991121.....	3999171.....	3999171.....
			3399943101 pt.....	3991251 pt.....	3991211.....	3399991YVW.....	3999100.....	3999100.....
339992W.....	39310.....	39310.....	3399943101 pt.....	3991251 pt.....	3991233.....			
339992WYWWW.....	3931000.....	3931000.....	3399943206.....	3991243.....	3991243.....	3399993.....	39992.....	39992.....
339992WYWY.....	3931002.....	3931002.....	3399943211 pt.....	3991253 pt.....	3991281.....	3399993101.....	3999222.....	3999222.....
			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
3399931 pt.....	31310 pt.....	31310 pt.....	3399943211 pt.....	3991253 pt.....	3991285.....	3399993YVW.....	3999200.....	3999200.....
			3399943YVW.....	3991200.....	3991200.....			
3399931 pt.....	39651.....	39651.....				3399995.....	39994.....	39994.....
3399931101 pt.....	3965131 pt.....	3965101.....	3399945.....	39913.....	39913.....	3399995100.....	3999400.....	3999400.....
3399931101 pt.....	3965131 pt.....	3965109.....	3399945101.....	3991321.....	3991321.....			
3399931106 pt.....	3965133 pt.....	3965111.....	3399945106 pt.....	3991328 pt.....	3991327.....	3399997.....	39997.....	39997.....
3399931106 pt.....	3965133 pt.....	3965119.....	3399945106 pt.....	3991328 pt.....	3991329.....	3399997100.....	3999700.....	3999700.....
3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
3399931111 pt.....	3965135 pt.....	3965121.....	3399945216.....	3991338.....	3991338.....	3399999.....	39998.....	39998.....
3399931111 pt.....	3965135 pt.....	3965129.....	3399945221.....	3991343.....	3991343.....	3399999101.....	3999813.....	3999813.....
3399931YVW pt.....	3131000 pt.....	3131000 pt.....	3399945226.....	3991398.....	3991398.....	3399999106 pt.....	3999816 pt.....	3999816.....
3399933YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
						3399999YVW.....	3999800.....	3999800.....
3399933.....	39654.....	39654.....						
3399933101 pt.....	3965441 pt.....	3965422.....	339994W pt.....	23920 pt.....	23920 pt.....	339999C.....	24991 pt.....	24991 pt.....
3399933101 pt.....	3965441 pt.....	3965423.....				339999C101.....	2499111.....	2499111.....
3399933106 pt.....	3965443 pt.....	3965431.....	339994W pt.....	39910.....	39910.....	339999C206.....	2499161.....	2499161.....
3399933106 pt.....	3965443 pt.....	3965433.....	339994WYVW pt.....	2392000 pt.....	2392000 pt.....	339999C311.....	2499115.....	2499115.....
3399933106 pt.....	3965443 pt.....	3965439.....	339994WYVW pt.....	2392002 pt.....	2392002 pt.....	339999C316.....	2499171.....	2499171.....
3399933YVW.....	3965400.....	3965400.....	339994WYVW pt.....	3991002.....	3991002.....	339999CYVW.....	2499100 pt.....	2499100 pt.....
3399935.....	39656.....	39656.....				339999H.....	39999 pt.....	39999 pt.....
3399935101.....	3965620.....	3965620.....	3399951.....	39951.....	39951.....	339999H101.....	3999907.....	3999907.....
3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
3399935111.....	3965633.....	3965633.....	3399951206.....	3995115.....	3995115.....	339999H111.....	3999951.....	3999951.....
3399935116.....	3965651.....	3965651.....	3399951YVW.....	3995100.....	3995100.....	339999H121.....	3999981.....	3999981.....
3399935121.....	3965671.....	3965671.....				339999H151 pt.....	3999997 pt.....	3999913 pt.....
3399935126 pt.....	3965691 pt.....	3965681.....	3399953.....	39952.....	39952.....	339999H151 pt.....	3999997 pt.....	3999924.....
3399935126 pt.....	3965691 pt.....	3965689.....	3399953101.....	3995211.....	3995211.....	339999H151 pt.....	3999997 pt.....	3999944 pt.....
3399935YVW.....	3965600.....	3965600.....	3399953106.....	3995252.....	3995252.....	339999H151 pt.....	3999997 pt.....	3999999 pt.....
			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
339993W pt.....	31310 pt.....	31310 pt.....						
						339999W pt.....	24990 pt.....	24990 pt.....
339993W pt.....	39650.....	39650.....	3399955.....	39953.....	39953.....			
339993WYWWW pt.....	3131000 pt.....	3131000 pt.....	3399955100 pt.....	3995300 pt.....	3995300.....	339999W pt.....	39990 pt.....	39990 pt.....
339993WYVW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
339993WYVW pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYVW pt.....	3999000 pt.....	3999000 pt.....
339993WYVW pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYVW pt.....	2499002 pt.....	2499002 pt.....
			3399955100 pt.....	3995300 pt.....	3995393.....	339999WYVW pt.....	3999002 pt.....	3999002 pt.....
3399941 pt.....	23924 pt.....	23924 pt.....						

Surgical Appliance and Supplies Manufacturing

1997

Issued August 1999

EC97M-3391C

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Surgical Appliance and Supplies Manufacturing

1997

Issued August 1999

EC97M-3391C

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339113	Surgical appliance & supplies mfg	1 512	1 649	84 644	2 962 463	53 366	100 444	1 260 347	9 965 450	5 279 722	15 322 690	564 628
259920	Furniture & fixtures, n.e.c. (pt)	N	15	2 763	112 085	1 459	3 379	44 622	431 659	198 298	633 709	19 795
384240	Surgical appliances & supplies (pt)	N	1 634	81 881	2 850 378	51 907	97 065	1 215 725	9 533 791	5 081 424	14 688 981	544 833

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
339113, SURGICAL APPLIANCE & SUPPLIES MFG												
United States	-	1 649	603	84 644	2 962 463	53 366	100 444	1 260 347	9 965 450	5 279 722	15 322 690	564 628
Alabama	1	23	11	1 080	18 979	854	1 271	10 884	62 213	65 922	126 362	1 686
Arizona	-	21	4	1 527	62 763	736	1 480	17 524	244 544	116 991	362 995	14 482
California	-	238	85	11 994	431 709	7 727	14 743	179 268	1 391 576	714 245	2 103 515	80 865
Colorado	1	38	13	923	28 093	555	1 051	12 777	69 850	42 610	112 177	3 437
Connecticut	1	26	15	1 173	41 506	826	1 627	19 056	94 291	55 067	149 224	7 373
Florida	1	113	30	2 898	94 888	1 751	3 086	35 108	252 136	130 871	374 710	15 593
Georgia	-	30	10	2 778	94 896	1 924	3 828	48 062	267 370	201 197	466 832	14 743
Idaho	4	9	1	104	2 666	77	128	1 402	6 217	2 836	9 120	369
Illinois	-	64	21	2 423	68 514	1 641	2 993	32 322	138 107	226 192	366 943	5 417
Indiana	-	33	15	6 384	270 989	3 729	6 572	112 990	1 259 357	409 552	1 683 598	50 527
Iowa	2	11	3	114	2 798	74	108	1 226	5 546	3 077	8 857	539
Kansas	-	14	8	715	16 992	532	1 473	8 594	135 317	26 944	156 974	7 904
Kentucky	-	22	10	762	19 848	582	917	9 521	34 468	34 142	71 036	1 959
Louisiana	2	13	1	107	3 788	83	150	2 165	6 365	3 702	10 131	359
Maryland	-	23	10	651	24 842	298	616	7 755	64 961	52 117	119 728	1 670
Massachusetts	1	45	24	2 340	93 793	1 240	2 416	36 490	273 609	94 467	359 235	15 621
Michigan	-	62	20	2 465	83 757	1 274	2 422	31 013	259 582	207 335	469 592	16 951
Minnesota	1	62	30	2 857	91 151	1 890	3 546	39 209	271 313	120 448	393 889	15 241
Mississippi	1	13	2	879	18 130	507	759	8 506	27 221	40 496	67 571	1 533
Missouri	1	27	12	1 132	27 268	883	1 717	17 283	83 633	43 298	127 427	5 005
Nevada	2	9	2	239	4 967	202	343	3 390	11 769	8 248	19 768	308
New Hampshire	1	14	2	261	7 233	144	338	3 029	18 244	10 321	28 350	463
New Jersey	-	53	26	6 521	369 787	3 160	5 949	104 449	893 085	379 188	1 276 888	87 971
New York	2	102	28	3 293	116 922	2 094	3 518	46 145	319 538	162 033	478 628	16 280
North Carolina	-	51	19	2 606	75 895	1 764	3 530	38 782	254 781	197 457	470 702	19 420
Ohio	-	85	41	5 399	163 912	3 701	7 061	83 015	610 138	342 598	935 959	24 214
Oklahoma	3	13	2	353	9 361	251	419	4 626	25 089	15 007	40 581	1 626
Oregon	4	20	3	215	6 345	124	214	2 667	15 043	9 663	25 125	505
Pennsylvania	-	86	34	3 854	121 449	2 141	4 270	47 479	281 651	261 395	542 549	20 584
South Carolina	1	8	5	879	22 398	692	1 334	14 883	51 644	38 249	89 546	3 624
Tennessee	-	30	15	3 687	130 128	2 203	3 667	55 595	528 692	255 780	838 281	33 765
Texas	-	111	41	7 314	223 553	5 069	9 602	107 866	945 858	532 485	1 491 017	48 415
Utah	2	20	10	532	13 456	381	726	7 278	37 996	25 585	62 864	2 822
Virginia	1	30	9	1 190	31 214	768	1 629	19 436	126 753	139 068	264 734	6 547
Washington	3	32	12	737	22 437	479	801	10 067	56 377	29 799	86 423	3 238
Wisconsin	-	33	11	1 276	37 287	850	1 535	19 718	92 556	56 318	148 769	2 687

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339113, SURGICAL APPLIANCE & SUPPLIES MFG		339113, SURGICAL APPLIANCE & SUPPLIES MFG	
— Con.		— Con.	
Companies ¹	number.. 1 512	Value added	\$1,000.. 9 965 450
All establishments	number.. 1 649	Total inventories, beginning of year	\$1,000.. 2 465 338
Establishments with 1 to 19 employees	number.. 1 046	Finished goods inventories, beginning of year	\$1,000.. 1 272 671
Establishments with 20 to 99 employees	number.. 410	Work-in-process inventories, beginning of year	\$1,000.. 418 391
Establishments with 100 employees or more	number.. 193	Materials and supplies inventories, beginning of year	\$1,000.. 774 276
All employees	number.. 84 644	Total inventories, end of year	\$1,000.. 2 429 891
Total compensation ²	\$1,000.. 3 726 943	Finished goods inventories, end of year	\$1,000.. 1 234 124
Annual payroll	\$1,000.. 2 962 463	Work-in-process inventories, end of year	\$1,000.. 379 420
Total fringe benefits	\$1,000.. 764 480	Materials and supplies inventories, end of year	\$1,000.. 816 347
Production workers, average for year	number.. 53 366	Gross book value of total assets at beginning of year	\$1,000.. 4 057 916
Production workers on March 15	number.. 53 344	Total capital expenditures (new and used)	\$1,000.. 564 628
Production workers on May 15	number.. 53 938	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 111 177
Production workers on August 15	number.. 53 111	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 453 451
Production workers on November 15	number.. 53 071	Total retirements ²	\$1,000.. 152 704
Production-worker hours	\$1,000.. 100 444	Gross book value of total assets at end of year	\$1,000.. 4 469 840
Production-worker wages	\$1,000.. 1 260 347	Total depreciation during year ²	\$1,000.. 417 178
Total cost of materials	\$1,000.. 5 279 722	Total rental payments ²	\$1,000.. 138 636
Cost of materials, parts, containers, etc., consumed	\$1,000.. 4 184 407	Buildings and other structures rental payments ²	\$1,000.. 83 235
Cost of resales	\$1,000.. 748 250	Machinery and equipment rental payments ²	\$1,000.. 55 401
Cost of fuels	\$1,000.. 16 177	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 36 549
Cost of purchased electricity	\$1,000.. 75 174	Response coverage ratio ⁴	percent.. 83
Cost of contract work	\$1,000.. 255 714	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 54 589
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 163 930	Response coverage ratio ⁴	percent.. 83
Quantity of electricity generated less sold for heat and power	1,000 kWh.. S	Cost of purchased communications services ³	\$1,000.. 78 837
Total value of shipments	\$1,000.. 15 322 690	Response coverage ratio ⁴	percent.. 83
Primary products value of shipments	\$1,000.. 12 506 322	Cost of purchased legal services ³	\$1,000.. 66 302
Secondary products value of shipments	\$1,000.. 1 389 244	Response coverage ratio ⁴	percent.. 83
Total miscellaneous receipts	\$1,000.. 1 427 124	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 19 966
Value of resales	\$1,000.. 1 304 507	Response coverage ratio ⁴	percent.. 83
Contract receipts	\$1,000.. 29 113	Cost of purchased advertising services ³	\$1,000.. 109 259
Other miscellaneous receipts	\$1,000.. 93 504	Response coverage ratio ⁴	percent.. 83
Primary products specialization ratio	percent.. 90	Cost of purchased software and other data processing services ³	\$1,000.. 22 314
Value of primary products shipments made in all industries	\$1,000.. 13 409 978	Response coverage ratio ⁴	percent.. 83
Value of primary products shipments made in this industry	\$1,000.. 12 506 322	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 8 674
Value of primary products shipments made in other industries	\$1,000.. 903 656	Response coverage ratio ⁴	percent.. 83
Coverage ratio	percent.. 93		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)	
	E ¹	Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
339113, SURGICAL APPLIANCE & SUPPLIES MFG												
All establishments	-	1 649	603	84 644	2 962 463	53 366	100 444	1 260 347	9 965 450	5 279 722	15 322 690	564 628
Establishments with 1 to 4 employees	8	531	-	1 064	33 956	794	1 168	16 340	87 981	53 146	142 228	5 723
Establishments with 5 to 9 employees	7	269	-	1 823	59 604	1 191	1 895	29 287	149 672	83 458	235 924	9 113
Establishments with 10 to 19 employees	4	246	-	3 447	116 969	2 232	3 753	54 717	283 275	149 560	435 889	12 437
Establishments with 20 to 49 employees	2	263	263	8 189	233 649	5 404	9 837	108 773	632 882	358 260	994 092	35 081
Establishments with 50 to 99 employees	1	147	147	10 321	297 714	7 112	13 305	139 976	768 874	467 182	1 243 343	40 542
Establishments with 100 to 249 employees	-	114	114	17 847	509 113	12 384	22 359	246 861	1 663 085	1 080 119	2 741 960	94 071
Establishments with 250 to 499 employees	-	48	48	17 184	584 625	11 111	22 404	263 322	2 293 755	1 194 442	3 501 073	124 800
Establishments with 500 to 999 employees	-	24	24	14 914	602 907	8 430	17 443	239 134	2 434 211	1 166 779	3 577 935	136 668
Establishments with 1,000 to 2,499 employees	-	7	7	9 855	523 926	4 708	8 280	161 937	1 651 715	726 776	2 450 246	106 193
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	632	-	3 018	80 071	2 057	2 843	37 910	218 218	133 536	355 367	14 375

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339113	Surgical appliance & supplies mfg	1 649	84 644	2 962 463	53 366	100 444	1 260 347	9 965 450	5 279 722	15 322 690	564 628
3391131	Surgical, orthopedic, prosthetic, and therapeutic appliances and supplies	540	59 947	2 263 524	36 440	69 634	922 725	7 812 700	3 965 021	11 840 649	448 824
3391135	Personal industrial safety devices	139	12 762	335 727	9 208	17 185	171 136	1 071 681	737 131	1 809 876	49 713
3391137	Hospital beds	9	2 733	111 513	1 436	3 345	44 253	430 555	197 381	631 688	19 740

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339113	Surgical appliances and supplies	N	X	X	13 409 978	N	X	X	N
3391131	Surgical, orthopedic, prosthetic, and therapeutic appliances and supplies	N	X	X	10 334 028	N	X	X	N
33911311	Orthopedic and prosthetic artificial joints and limbs	N	X	X	2 022 685	N	X	X	N
3391131101	Orthopedic and prosthetic artificial joints	35	X	X	1 919 348	29	X	X	1 496 466
3391131104	Orthopedic and prosthetic artificial limbs	63	X	X	103 337	87	X	X	87 521
33911312	All other orthopedic and prosthetic appliances	N	X	X	2 079 370	N	X	X	N
3391131207	Orthopedic and prosthetic mechanical braces	72	X	X	235 997	77	X	X	142 681
3391131211	Orthopedic and prosthetic elastic braces, suspensories, and other elastic supports	41	X	X	165 600	38	X	X	222 301
3391131214	Orthopedic and prosthetic elastic stockings	7	X	X	D	12	X	X	45 501
3391131217	Orthopedic and prosthetic surgical corsets	12	X	X	D	14	X	X	21 380
3391131221	Orthopedic and prosthetic splints and trusses	20	X	X	75 190	22	X	X	70 945
3391131224	Orthopedic and prosthetic crutches, canes (orthopedic), and other walking assistance devices	14	X	X	120 663	15	X	X	82 973
3391131227	Orthopedic and prosthetic arch supports and other foot appliances	48	X	X	270 344	31	X	X	149 486
3391131231	Orthopedic and prosthetic intraocular lenses, orthopedic and prosthetic appliances	8	X	X	361 934	13	X	X	291 930
3391131234	Other orthopedic and prosthetic appliances	99	X	X	761 109	61	X	X	516 380
33911313	Surgical dressings	N	X	X	1 045 917	N	X	X	N
3391131337	Surgical dressings, elastic bandages	11	X	X	68 911	16	X	X	40 165
3391131341	Surgical dressings, other bandages, including muslin, plaster of paris, etc, excluding self-adhering bandages	12	X	X	48 009	20	X	X	107 392
3391131344	Surgical dressings, adhesive plaster, medicated and nonmedicated, including self-adhering bandages	15	X	X	270 113	16	X	X	273 072
3391131347	Surgical dressings, gauze (absorbent and packing)	10	X	X	117 490	9	X	X	57 047
3391131351	Surgical dressings, cotton, including cotton balls (sterile and nonsterile)	10	X	X	147 438	13	X	X	76 740
3391131354	Other surgical dressings, including sponges, compresses, pads, etc	29	X	X	393 956	30	X	X	425 542
33911314	Disposable surgical drapes, including O/B and O/R packs	N	X	X	430 936	N	X	X	N
3391131457	Disposable surgical drapes, including O/B and O/R packs	24	X	X	430 936	34	X	X	631 613
33911315	All other surgical and orthopedic items	N	X	X	4 717 681	N	X	X	N
3391131567	Sterile surgical sutures	9	X	X	475 056	13	X	X	528 777
3391131571	Breathing devices, excluding anesthetic apparatus but including incubators, respirators, resuscitators, inhalators, etc	29	X	X	462 396	38	X	X	353 931
3391131574	Patient transport devices, wheelchairs	24	X	X	428 911	25	X	X	280 475
3391131577	Other patient transport devices, including stretchers, tables, etc., except wheelchairs	26	X	X	132 413	27	X	X	141 121
3391131581	Therapeutic appliances and supplies, hydrotherapy equipment, including full body and limb tanks (portable and stationary)	13	X	X	100 839	7	X	X	36 160
3391131584	Other therapeutic appliances and supplies, excluding electromedical	45	X	X	354 133	35	X	X	157 852
3391131587	Surgical kits	18	X	X	799 088	19	X	X	559 033
3391131591	Other surgical and orthopedic products, nec	94	X	X	1 793 953	134	X	X	1 797 097
3391131594	Parts for surgical, orthopedic, prosthetic, and therapeutic appliances and supplies	43	X	X	170 892	69	X	X	157 703
3391131Y	Surgical, orthopedic, prosthetic, and therapeutic appliances and supplies, nsk	N	X	X	37 439	N	X	X	N
3391131YWV	Surgical, orthopedic, prosthetic, and therapeutic appliances and supplies, nsk	N	X	X	37 439	N	X	X	N
3391135	Personal industrial safety devices	N	X	X	1 598 601	N	X	X	1 345 172
33911351	Personal industrial safety devices	N	X	X	1 574 062	N	X	X	N
3391135101	Personal industrial safety devices, respiratory protection equipment, including gas masks, abrasive masks, canister masks, etc	24	X	X	536 408	27	X	X	485 501
3391135106	Personal industrial safety devices, helmets (hardhats)	11	X	X	97 904	11	X	X	65 454

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339113	Surgical appliances and supplies—Con.								
3391135	Personal industrial safety devices—Con.								
33911351	Personal industrial safety devices—Con.								
3391135111	Personal industrial safety devices, eye and face protection devices (face shields, welding helmets, masks), excluding industrial goggles and eye protectors	23	X	X	135 121	30	X	X	103 917
3391135116	Personal industrial safety devices, protective clothing, except shoes	56	X	X	397 113	67	X	X	360 117
3391135121	First aid, snake bite, and burn kits, both household and industrial types	15	X	X	39 210	15	X	X	39 927
3391135126	Other personal safety devices, including motorcycle and auto racing helmets	70	X	X	368 306	55	X	X	246 153
3391135Y	Personal industrial safety devices, nsk	N	X	X	24 539	N	X	X	N
3391135YWW	Personal industrial safety devices, nsk	N	X	X	24 539	N	X	X	44 103
3391137	Hospital beds	N	X	X	481 450	N	X	X	372 390
33911371	Hospital beds	N	X	X	481 450	N	X	X	N
3391137100	Hospital beds	22	X	X	481 450	27	X	X	372 390
339113W	Surgical appliances and supplies manufacturing, nsk	N	X	X	995 899	N	X	X	N
339113WY	Surgical appliances and supplies manufacturing, nsk, total	N	X	X	995 899	N	X	X	N
339113WYWW	Surgical appliances and supplies manufacturing, nsk, for nonadministrative-record establishments	N	X	X	673 106	N	X	X	N
339113WYWY	Surgical appliances and supplies manufacturing, nsk, for administrative-record establishments	N	X	X	322 793	N	X	X	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3391131	SURGICAL, ORTHOPEDIC, PROSTHETIC, AND THERAPEUTIC APPLIANCES AND SUPPLIES		
	United States	10 334 028	N
	California	1 486 873	N
	Colorado	54 985	N
	Connecticut	279 337	N
	Florida	209 402	N
	Georgia	293 949	N
	Illinois	255 753	N
	Indiana	929 380	N
	Iowa	5 018	N
	Kansas	141 146	N
	Kentucky	18 728	N
	Louisiana	4 409	N
	Maryland	58 840	N
	Massachusetts	251 524	N
	Michigan	178 826	N
	Minnesota	297 354	N
	Missouri	155 476	N
	Nebraska	12 049	N
	New Jersey	1 020 388	N
	New York	309 221	N
	North Carolina	228 601	N
	Ohio	716 213	N
	Oregon	9 339	N
	Pennsylvania	308 962	N
	Tennessee	556 677	N
	Texas	1 159 964	N

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3391131	SURGICAL, ORTHOPEDIC, PROSTHETIC, AND THERAPEUTIC APPLIANCES AND SUPPLIES—Con.		
	Utah	39 127	N
	Virginia	256 697	N
	Washington	46 476	N
	Wisconsin	91 655	N
3391135	PERSONAL INDUSTRIAL SAFETY DEVICES		
	United States	1 598 601	1 345 172
	Alabama	89 435	33 888
	California	170 239	145 711
	Colorado	20 738	N
	Connecticut	23 985	N
	Delaware	16 198	30 492
	Florida	53 680	N
	Illinois	67 562	61 127
	Kentucky	51 598	41 942
	Massachusetts	73 974	30 323
	Michigan	46 956	53 506
	Minnesota	100 619	N
	Nevada	12 623	N
	New Jersey	21 159	39 731
	New York	19 965	54 383
	North Carolina	132 947	100 639
	Ohio	50 987	29 237
	Pennsylvania	177 085	196 861
	Texas	39 728	75 200
	Virginia	5 861	N
	Wisconsin	9 608	13 506
3391137	HOSPITAL BEDS		
	United States	481 450	372 390

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339113	SURGICAL APPLIANCE & SUPPLIES MFG				
33910000	Surgical and orthopedic supplies, including sutures and hypodermic needles for further manufacture or assembly	X	568 774	X	N
001900B7	Resistors, capacitors, transformers, electron tubes, semiconductors, and other electronic components	X	95 007	X	N
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products	X	37 451	X	N
33200043	All other fabricated metal products (except castings and forgings)	X	157 503	X	N
33211101	Iron and steel forgings	X	12 968	X	N
33211201	Nonferrous forgings	X	14 629	X	N
33151001	Iron and steel castings (rough and semifinished)	X	69 906	X	N
33152011	Nonferrous (aluminum, copper, etc.) castings (rough and semifinished)	X	21 814	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	71 964	X	N
331000AJ	Nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	49 195	X	N
31323001	Nonwoven fabrics	X	328 595	X	N
31321025	Broadwoven fabrics	X	213 341	X	N
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	119 705	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	134 440	X	N
32610009	Fabricated plastics products	X	135 386	X	N
32600017	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	X	25 604	X	N
32720007	Glass and glass products, except photographic and projection lenses and prisms	X	4 974	X	N
32552001	Adhesives and sealants	X	30 944	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	116 362	X	N
32210015	Paper and paperboard products except paperboard boxes, containers, and corrugated paperboard	X	74 412	X	N
00970099	All other materials and components, parts, containers, and supplies	X	834 769	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 066 379	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339113 SURGICAL APPLIANCE AND SUPPLIES MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing surgical appliances and supplies. Examples of products made by these establishments are orthopedic devices, prosthetic appliances, surgical dressings, crutches, surgical sutures, and personal industrial safety devices (except protective eyewear).

The data published with NAICS code 339113 include the following SIC industries:

2599 Furniture and fixtures, n.e.c. (pt)
3842 Surgical appliances and supplies (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339113 do not include establishments primarily engaged in the manufacture of rubber gloves and life jackets. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt				3399121101	3914111	3914111
3391121661	3841196	3841196				3399121106	3914131	3914131
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt				3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114W pt.	38430	38430	3399121121	3914153	3914153
			339114WYWW pt.	3699000 pt.	3699000 pt	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWW pt.	3843000	3843000	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWW pt.	3699002 pt.	3699002 pt			
3391123111	3841293	3841293	339114WYWW pt.	3843002	3843002			
3391123116	3841296	3841296						
3391123YWV	3841200	3841200						
339112W pt.	38290 pt.	38290 pt	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
			3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
339112W pt.	38410	38410	3391151106	3851117	3851117	3399123106	3914211	3914211
339112WYWW pt.	3829000 pt.	3829000 pt	3391151111	3851118	3851118	3399123111	3914235	3914235
339112WYWW pt.	3841000	3841000	3391151116	3851119	3851119	3399123116	3914241	3914241
339112WYWW pt.	3829002 pt.	3829002 pt	3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112WYWW pt.	3841002	3841002				3399123126	3914275	3914270 pt
						3399123126	3479024	3479021 pt
3391131	38421 pt.	38421 pt	3391153	38514	38514	3399123YWV pt.	3479000 pt.	3479000 pt
339113101	3842101	3842101	3391153101	3851431	3851431	3399123YWV pt.	3914200 pt.	3914200 pt
339113104	3842102	3842102	3391153106	3851445	3851445			
3391131207	3842104	3842104	3391153YWV	3851400	3851400	339912W pt.	34790 pt.	34790 pt
3391131211	3842105	3842105						
3391131214	3842106	3842106	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
3391131217	3842107	3842107	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131217	3842108	3842108	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131224	3842109	3842109	3391155YWV	3851500	3851500	339912WYWW pt.	3479002 pt.	3479002 pt
3391131227	3842110	3842110				339912WYWW pt.	3914002 pt.	3914002 pt
3391131231	3842112	3842112	3391157	38516	38516			
			3391157101	3851612	3851612	3399131	39152	39152
			3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
			3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
						3399131100 pt.	3915200 pt.	3915233
3391131234	3842113	3842113	339115B	38517	38517			
3391131337	3842122	3842122	339115B101	3851702	3851702	3399133	39153	39153
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt			
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135	39154	39154
3391131571	3842165	3842165				3399135100	3915400	3915400
3391131574	3842183	3842183	339115W	38510	38510	339913W	39150	39150
3391131577	3842185	3842185	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131581	3842187	3842187	339115WYWW	3851002	3851002	339913WYWW	3915002	3915002
3391131584	3842189	3842189						
3391131587	3842191	3842191	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131591	3842197	3842197	3391160100 pt.	8072001	8072000 pt			
3391131594	3842198	3842198	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131YWV	3842100 pt.	3842100 pt	3391160YWW	8072000 pt.	8072000 pt			
			3391160YWY	8072002	8072000 pt			
3391135	38423	38423	3399111	39111	39111	3399140 pt.	34998 pt.	34998 pt
3391135101	3842311	3842311	3399111101	3911111	3911111			
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140111 pt.	39610	39610
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140111 pt.	3961032 pt.	3961031
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140118	3499895	3499899 pt
3391135121	3842361	3842361	3399111526	3911115	3911115	3399140201	3961011	3961011
3391135126	3842373	3842373	3399111531	3911198	3911198	3399140206 pt.	3961022 pt.	3961021
3391135YWV	3842300	3842300	3399111YWV	3911100	3911100	3399140206 pt.	3961022 pt.	3961041 pt
						3399140216	3961051	3961051
3391137	25991	25991				3399140221	3961072	3961072
3391137100	2599100	2599100				3399140226 pt.	3479026	3479021 pt
						3399140226 pt.	3961098 pt.	3961096
339113W pt.	25990 pt.	25990 pt	3399113	39113	39113			
			3399113101	3911311	3911311	3399140226 pt.	3961098 pt.	3961099
			3399113106 pt.	3911315 pt.	3911321	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	38420 pt.	38420 pt	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3499000 pt.	3499000 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	3842000 pt.	3842000 pt	3399113116 pt.	3911317 pt.	3911341 pt	3399140YWW pt.	3961000	3961000
339113WYWW pt.	2599002 pt.	2599002 pt	33991131316	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWW pt.	3842002 pt.	3842002 pt	3399113YWV	3911300	3911300	3399140YWW pt.	3479002 pt.	3479002 pt
						3399140YWW pt.	3499002 pt.	3499002 pt
3391141 pt.	36992 pt.	36992 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3961002	3961002

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399323566	3944443	3944443			
3399201YVW	3949100	3949100	3399323YVW	3944400	3944400			
			3399325	39445	39445	3399503	39932	39932
3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203206	3949241	3949241	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203311	3949245	3949245	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203416	3949247	3949247	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203421	3949298	3949298	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203YVW	3949200	3949200	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
			3399325236	3944530	3944530	3399503106 pt	3993203 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301				3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302						
3399205YVW	3949300	3949300						
			3399327	39446	39446	3399503111 pt	3993205 pt	3993278 pt
3399207	39494	39494	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207101	3949401	3949401	3399327101 pt	3944615 pt	3944618	3399503116 pt	3993207 pt	3993252 pt
3399207111	3949411	3949402 pt	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993272 pt
3399207121	3949421	3949406 pt	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993276 pt
3399207131 pt	3949431 pt	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949403	3399327221	3944695	3944695	3399503121 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949406 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993278 pt
3399207141	3949441	3949406 pt	3399327YVW	3944600	3944600	3399503126 pt	3993211 pt	3993252 pt
3399207151	3949451	3949406 pt				3399503126 pt	3993211 pt	3993272 pt
3399207199 pt	3949499 pt	3949404	3399329	39447	39447	3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949405	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503YVW	3993200	3993200
3399207YVW	3949400	3949400	3399329100 pt	3944718 pt	3944716			
			3399329100 pt	3944718 pt	3944716			
3399209	39495	39495	339932W	39440 pt	39440 pt	3399505	39933	39933
3399209101	3949511	3949511	339932WYVW	3944000 pt	3944000 pt	3399505101	3993311	3993300 pt
3399209106	3949515	3949515	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
3399209111	3949527	3949527				3399505YVW	3993300	3993300 pt
3399209116	3949528	3949528	3399411	39511	39511			
339920911A	3949569	3949569	3399411101	3951102	3951102	339950W	39930	39930
339920911F	3949575	3949575	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911K	3949577	3949577	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911P	3949581	3949593 pt	3399411YVW	3951100	3951100			
339920911U	3949592	3949592	3399413	39512	39512	3399911	30534	30534
339920911Y	3949583	3949593 pt	3399413101	3951202	3951202	3399911111	3053415	3053415
			3399413206	3951206	3951206	3399911121 pt	3053419 pt	3053411
3399209121	3949530	3949530	3399413YVW	3951200	3951200	3399911121 pt	3053419 pt	3053418
3399209126	3949536	3949536				3399911YVW	3053400	3053400
339920912A	3949596	3949596	3399415	39513	39513			
339920912F	3949594	3949594	3399415101	3951305	3951305	3399913	30535	30535
339920912K	3949595	3949595	3399415106	3951310	3951310	3399913111	3053515	3053515
339920912P	3949597	3949597	3399415111	3951313	3951313	3399913221	3053524	3053531 pt
339920912U	3949599 pt	3949599	3399415116	3951325	3951325	3399913331	3053517	3053517
339920912U pt	3949599 pt	3949599	3399415YVW	3951300	3951300	3399913341	3053519	3053519
3399209131	3949537	3949537				3399913351 pt	3053529 pt	3053511
3399209136	3949538	3949538	339941W	39510	39510	3399913351 pt	3053529 pt	3053513
			339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053521
3399209141	3949539	3949539	339941WYVW	3951002	3951002	3399913351 pt	3053529 pt	3053531 pt
3399209146	3949541	3949541	3399421 pt	25311 pt	25311 pt	3399913YVW	3053500	3053500
3399209151	3949551	3949551						
3399209156 pt	3949561 pt	3949564	3399421	39523	39523	3399915	30536	30536
3399209156 pt	3949561 pt	3949586	3399421101	3952310	3952310	3399915111	3053621	3053621
3399209161	3949591	3949591	3399421106	3952313	3952313	3399915221	3053622	3053622
3399209166	3949585	3949585	3399421111	3952322	3952322	3399915231	3053625	3053625
3399209171	3949572	3949553 pt	3399421316	2531191 pt	2531198 pt	3399915241	3053626	3053626
3399209176	3949574	3949553 pt	3399421YVW pt	2531100 pt	2531100 pt	3399915251	3053630	3053630
3399209181	3949576	3949553 pt	3399421YVW pt	3952300	3952300	3399915261	3053635	3053635
						3399915YVW	3053600	3053600
3399209186	3949556	3949556	3399423	39524 pt	39524 pt			
3399209191	3949571	3949571 pt	3399423101	3952414	3952413 pt	3399917	30537	30537
3399209193	3949565	3949571 pt	3399423206	3952421	3952419 pt	3399917111	3053729	3053729
3399209196	3949570	3949570	3399423YVW	3952400 pt	3952400 pt	3399917121	3053748	3053748
3399209YVW	3949500	3949500				3399917YVW	3053700	3053700
			3399425	35799 pt	35799 pt			
339920W	39490	39490	3399425000 pt	3579900 pt	3579900 pt	3399918	30538	30538
339920WYVW	3949000	3949000	3399425000 pt	3579930	3579930	3399918111	3053810	3053810
339920WYVW	3949002	3949002	339942W pt	25310 pt	25310 pt	3399918121	3053813	3053813
						3399918131	3053815	3053815
3399310	39420	39420	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
3399310106	3942012	3942012	339942W pt	35790 pt	35790 pt	3399918251	3053817	3053817
3399310111	3942021	3942021	339942W pt	35790 pt	35790 pt	3399918YVW	3053800	3053800
3399310131	3942056	3942056	339942WYVW pt	2531000 pt	2531000 pt			
3399310216	3942043	3942043	339942WYVW pt	3579000 pt	3579000 pt	3399919	30539	30539
3399310301	3942008	3942008	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310321	3942053	3942053	339942WYVW pt	3579002 pt	3579002 pt	3399919121	3053973	3053973
3399310326	3942054	3942054	339942WYVW pt	3579002 pt	3579002 pt	3399919131	3053975	3053975
3399310YVW	3942000	3942000	339942WYVW pt	3952002 pt	3952002 pt	3399919141	3053977	3053977
3399310YVW	3942002	3942002				3399919151 pt	3053989 pt	3053979
			3399430	39530	39530	3399919151 pt	3053989 pt	3053981
3399321	39443 pt	39443 pt	3399430101	3953013	3953013	3399919YVW	3053900	3053900
3399321101	3944316	3944316	3399430106	3953015	3953015			
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Dental Equipment and Supplies Manufacturing

1997

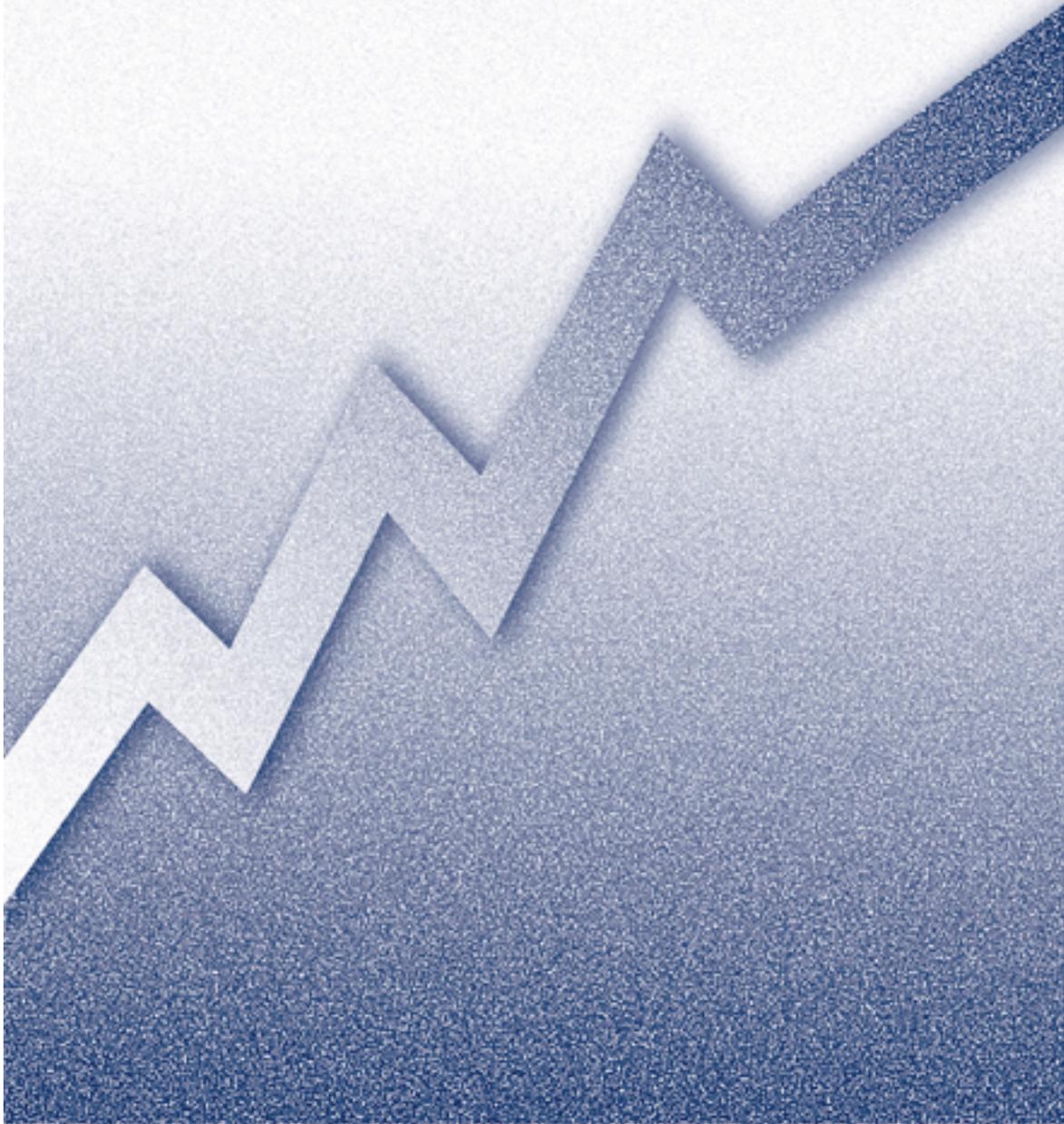
Issued July 1999

EC97M-3391D

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Dental Equipment and Supplies Manufacturing

1997

Issued July 1999

EC97M-3391D

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339114	Dental equipment & supplies mfg	852	876	17 669	594 259	11 601	21 467	279 150	1 736 410	950 524	2 661 966	70 536
369985	Electrical equipment & supplies, n.e.c. (pt)	N	-	-	-	-	-	-	-	-	-	-
384300	Dental equipment & supplies ..	N	876	17 669	594 259	11 601	21 467	279 150	1 736 410	950 524	2 661 966	70 536

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339114, DENTAL EQUIPMENT & SUPPLIES MFG												
United States	1	876	141	17 669	594 259	11 601	21 467	279 150	1 736 410	950 524	2 661 966	70 536
California	-	168	31	3 798	139 614	2 468	4 318	68 529	472 107	216 354	690 394	15 296
Colorado	2	25	4	596	17 554	332	614	7 052	51 659	25 107	63 267	2 233
Connecticut	-	12	5	560	20 877	349	657	7 862	54 312	58 311	111 154	1 526
Florida	6	36	4	372	8 093	291	456	5 159	19 369	9 478	29 168	504
Illinois	-	47	11	1 394	53 040	797	1 553	22 023	144 372	90 927	234 464	7 339
Indiana	4	17	5	692	19 115	445	874	9 202	38 633	16 845	55 319	2 829
Michigan	-	25	3	377	14 248	278	501	8 891	89 936	33 865	124 755	1 606
Minnesota	2	16	2	250	10 575	94	200	2 752	20 165	12 634	31 359	132
Missouri	2	14	4	247	7 846	163	331	3 651	30 955	9 565	39 568	742
New Jersey	-	31	9	783	27 207	469	951	10 273	60 192	27 965	86 910	2 279
New York	-	60	10	861	27 806	571	1 008	14 335	88 821	94 802	185 644	3 838
North Carolina	-	24	3	443	17 908	281	581	8 150	29 654	42 411	65 602	1 318
Ohio	3	24	1	165	3 896	116	187	2 440	11 965	8 869	20 448	1 096
Oregon	1	38	11	1 651	60 658	1 155	2 185	28 388	126 295	80 024	203 824	11 144
Pennsylvania	-	43	15	1 725	58 971	1 139	2 431	28 934	172 857	70 482	240 140	6 921
Texas	3	34	1	210	6 047	151	298	3 427	10 424	6 378	17 378	349
Washington	1	25	4	263	8 814	178	320	4 042	16 516	13 251	29 762	457
Wisconsin	1	13	1	336	11 279	258	509	5 681	42 615	6 511	48 617	718

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339114, DENTAL EQUIPMENT & SUPPLIES MFG		339114, DENTAL EQUIPMENT & SUPPLIES MFG— Con.	
Companies ¹	number.. 852	Value added	\$1,000.. 1 736 410
All establishments	number.. 876	Total inventories, beginning of year	\$1,000.. 433 728
Establishments with 1 to 19 employees	number.. 735	Finished goods inventories, beginning of year	\$1,000.. 180 549
Establishments with 20 to 99 employees	number.. 104	Work-in-process inventories, beginning of year	\$1,000.. 130 855
Establishments with 100 employees or more	number.. 37	Materials and supplies inventories, beginning of year	\$1,000.. 122 324
All employees	number.. 17 669	Total inventories, end of year	\$1,000.. 491 486
Total compensation ²	\$1,000.. 737 116	Finished goods inventories, end of year	\$1,000.. 203 667
Annual payroll	\$1,000.. 594 259	Work-in-process inventories, end of year	\$1,000.. 132 705
Total fringe benefits	\$1,000.. 142 857	Materials and supplies inventories, end of year	\$1,000.. 155 114
Production workers, average for year	number.. 11 601	Gross book value of total assets at beginning of year	\$1,000.. 602 097
Production workers on March 15	number.. 11 498	Total capital expenditures (new and used)	\$1,000.. 70 536
Production workers on May 15	number.. 11 530	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 13 519
Production workers on August 15	number.. 11 621	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 57 017
Production workers on November 15	number.. 11 755	Total retirements ²	\$1,000.. 30 344
Production-worker hours	\$1,000.. 21 467	Gross book value of total assets at end of year	\$1,000.. 642 289
Production-worker wages	\$1,000.. 279 150	Total depreciation during year ²	\$1,000.. 50 643
Total cost of materials	\$1,000.. 950 524	Total rental payments ²	\$1,000.. 26 213
Cost of materials, parts, containers, etc., consumed	\$1,000.. 721 809	Buildings and other structures rental payments ²	\$1,000.. 13 739
Cost of resales	\$1,000.. 178 734	Machinery and equipment rental payments ²	\$1,000.. 12 474
Cost of fuels	\$1,000.. 2 608	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 748
Cost of purchased electricity	\$1,000.. 13 489	Response coverage ratio ⁴	percent.. 67
Cost of contract work	\$1,000.. 33 884	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 9 735
Quantity of electricity purchased for heat and power	1,000 kWh.. 192 991	Response coverage ratio ⁴	percent.. 67
Quantity of electricity generated less sold for heat and power	1,000 kWh.. S	Cost of purchased communications services ³	\$1,000.. 7 216
Total value of shipments	\$1,000.. 2 661 966	Response coverage ratio ⁴	percent.. 67
Primary products value of shipments	\$1,000.. 2 215 318	Cost of purchased legal services ³	\$1,000.. 6 525
Secondary products value of shipments	\$1,000.. 95 726	Response coverage ratio ⁴	percent.. 67
Total miscellaneous receipts	\$1,000.. 350 922	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 230
Value of resales	\$1,000.. 327 813	Response coverage ratio ⁴	percent.. 67
Contract receipts	\$1,000.. 6 600	Cost of purchased advertising services ³	\$1,000.. 25 307
Other miscellaneous receipts	\$1,000.. 16 509	Response coverage ratio ⁴	percent.. 67
Primary products specialization ratio	percent.. 95	Cost of purchased software and other data processing services ³	\$1,000.. 4 462
Value of primary products shipments made in all industries	\$1,000.. 2 360 846	Response coverage ratio ⁴	percent.. 67
Value of primary products shipments made in this industry	\$1,000.. 2 215 318	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 350
Value of primary products shipments made in other industries	\$1,000.. 145 528	Response coverage ratio ⁴	percent.. 67
Coverage ratio	percent.. 93		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339114, DENTAL EQUIPMENT & SUPPLIES MFG												
All establishments	1	876	141	17 669	594 259	11 601	21 467	279 150	1 736 410	950 524	2 661 966	70 536
Establishments with 1 to 4 employees	9	421	—	833	20 229	620	874	10 777	51 981	25 392	78 164	2 044
Establishments with 5 to 9 employees	7	196	—	1 310	34 882	948	1 629	21 671	91 676	40 170	135 012	2 544
Establishments with 10 to 19 employees	5	118	—	1 537	43 077	1 157	2 036	25 164	102 484	41 643	143 808	2 388
Establishments with 20 to 49 employees	2	69	69	2 170	68 952	1 415	2 716	32 896	147 070	85 533	229 892	6 207
Establishments with 50 to 99 employees	—	35	35	2 315	67 498	1 535	2 952	33 332	172 440	174 680	340 905	5 945
Establishments with 100 to 249 employees	—	25	25	4 148	148 566	2 351	4 581	58 469	503 870	325 258	811 304	17 846
Establishments with 250 to 499 employees	—	9	9	3 393	125 787	2 304	4 564	58 723	456 957	182 706	628 773	17 522
Establishments with 500 to 999 employees	—	3	3	1 963	85 268	1 271	2 115	38 118	209 932	75 142	294 108	16 040
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	468	—	1 420	31 730	998	1 337	15 718	80 928	41 131	123 475	3 569

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339114	Dental equipment & supplies mfg	876	17 669	594 259	11 601	21 467	279 150	1 736 410	950 524	2 661 966	70 536
3391141	Dental professional equipment and supplies	182	11 473	414 190	7 435	14 010	186 583	1 282 033	597 474	1 849 844	51 177
3391143	Dental laboratory equipment and supplies	167	4 064	127 893	2 720	5 371	67 062	331 172	289 068	622 874	13 723

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339114	Dental equipment and supplies	N	X	X	2 360 846	N	X	X	N
3391141	Dental professional equipment and supplies	N	X	X	1 591 680	N	X	X	N
33911411	Professional dental equipment	N	X	X	703 859	N	X	X	N
3391141101	Dental chairs	21	X	X	97 966	14	X	X	58 023
3391141106	Dental instrument delivery systems, dental units	17	X	X	120 681	19	X	X	65 093
3391141111	Dental hand pieces	19	X	X	94 288	21	X	X	48 256
3391141116	Dental hand instruments (forceps and pliers, broaches, cutting instruments, etc)	23	X	X	132 753	26	X	X	90 775
3391141121	Other dental professional equipment, including dental lasers, excluding x-ray	48	X	X	258 171	N	X	X	N
33911412	Professional dental supplies	N	X	X	884 951	N	X	X	N
3391141226	Dental burs, diamond points, abrasive points, wheels, disks, and similar tools for use with dental hand pieces	14	X	X	78 293	14	X	X	42 236
3391141231	Dental alloys for amalgams	7	X	X	41 294	9	X	X	53 427
3391141236	Dental impression materials (alginates, silicones, etc)	21	X	X	148 776	12	X	X	51 502
3391141241	Dental cements and other nonmetallic filling materials	18	X	X	127 111	15	X	X	77 363
3391141246	Other dental professional supplies	80	X	X	489 477	58	X	X	300 152
3391141Y	Dental professional equipment and supplies, nsk	N	X	X	2 870	N	X	X	N
3391141YVV	Dental professional equipment and supplies, nsk	N	X	X	2 870	N	X	X	N
3391143	Dental laboratory equipment and supplies	N	X	X	501 294	N	X	X	415 386
33911431	Dental laboratory equipment and supplies	N	X	X	500 220	N	X	X	N
3391143101	Dental laboratory equipment (furnaces, casting machines, lathes, benches, polishing units, flasks, blow pipes, etc)	16	X	X	32 102	13	X	X	96 763
3391143106	Dental laboratory supplies, precious metals	10	X	X	257 615	13	X	X	165 917
3391143111	Dental laboratory supplies, nonprecious metals	14	X	X	45 651	13	X	X	56 604
3391143116	Dental laboratory supplies, teeth (excluding dentures)	14	X	X	81 804	14	X	X	38 016
3391143121	Other dental laboratory supplies (waxes, gypsums, etc)	25	X	X	83 048	31	X	X	51 834
3391143Y	Dental laboratory equipment and supplies, nsk	N	X	X	1 074	N	X	X	N
3391143YVV	Dental laboratory equipment and supplies, nsk	N	X	X	1 074	N	X	X	6 252
339114W	Dental equipment and supplies manufacturing, nsk, total	N	X	X	267 872	N	X	X	N
339114WY	Dental equipment and supplies manufacturing, nsk, total	N	X	X	267 872	N	X	X	N
339114WYWW	Dental equipment and supplies manufacturing, nsk, for nonadministrative-record establishments	N	X	X	162 482	N	X	X	N
339114WYWY	Dental equipment and supplies manufacturing, nsk, for administrative-record establishments	N	X	X	105 390	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3391141	DENTAL PROFESSIONAL EQUIPMENT AND SUPPLIES		
	United States	1 591 680	N
	California	444 449	N
	Colorado	64 526	N
	Connecticut	59 581	N
	Florida	10 511	N
	Illinois	151 211	N
	Missouri	33 128	N
	New Jersey	60 053	N
	New York	30 560	N
	Oregon	176 428	N
	Pennsylvania	140 260	N
	Texas	9 964	N
	Utah	13 965	N
	Washington	22 188	N
3391143	DENTAL LABORATORY EQUIPMENT AND SUPPLIES		
	United States	501 294	415 386
	California	128 694	85 832
	Illinois	24 341	N
	Michigan	5 823	N
	Minnesota	14 866	N
	Missouri	2 291	N
	New Jersey	12 707	9 306
	New York	138 540	105 452
	Ohio	2 675	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339114	DENTAL EQUIPMENT & SUPPLIES MFG				
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products	X	15 338	X	N
33210001	Forgings	X	1 648	X	N
33100035	Castings (rough and semifinished)	X	12 865	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	17 085	X	N
33200095	Other fabricated metal products (except forgings)	X	47 758	X	54 217
331000AJ	Nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	9 825	X	9 300
33141901	Precious metals (gold, platinum, etc.), all forms, including ingot, sheet, strip, solder, plating, electrodes, etc.	X	141 172	X	136 466
32500007	Chemicals, all types, except resins	X	54 144	X	31 614
001900B7	Resistors, capacitors, transformers, electron tubes, semiconductors, and other electronic components	X	30 269	X	8 770
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	11 409	X	10 981
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	13 896	X	10 933
32610011	Fabricated plastics products (except gaskets)	X	32 320	X	21 214
32720007	Glass and glass products, except photographic and projection lenses and prisms	X	14 359	X	15 083
32210015	Paper and paperboard products except paperboard boxes, containers, and corrugated paperboard	X	13 487	X	5 806
32221001	Paperboard containers, boxes, and corrugated paperboard	X	25 653	X	14 170
00970099	All other materials and components, parts, containers, and supplies	X	152 169	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	128 412	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339114 DENTAL EQUIPMENT AND SUPPLIES MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing dental equipment and supplies used by dental laboratories and offices of dentists, such as dental chairs, dental instrument delivery systems, dental hand instruments, and dental impression material.

The data published with NAICS code 339114 include the following SIC industries:

- 3699 Electrical equipment and supplies, n.e.c. (pt)
- 3843 Dental equipment and supplies

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt	38295 pt	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	38430	38430	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3699000 pt.	3699000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3843000	3843000	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	339114WYWW pt.	3699002 pt.	3699002 pt	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	339114WYWW pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWW	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWW	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWW	3851400	3851400	3399123YWW pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWW	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWW	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWW	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
			3391160	80720	80720	339913W	39150	39150
3391131574	3842183	3842183	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072000 pt.	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160YWW	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWW	8072002	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160YWW	8072002	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWW	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131598	3842198	3842198	3399111	39111	39111	3399140 pt.	39610	39610
3391131YWW	3842100 pt.	3842100 pt	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
			3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135	38423	38423	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135101	3842311	3842311	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135106	3842321	3842321	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135111	3842322	3842322	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135116	3842351	3842351	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135121	3842361	3842361	3399111YWW	3911100	3911100	3399140221	3961072	3961072
3391135126	3842373	3842373				3399140226 pt.	3479026	3479021 pt
3391135YWW	3842300	3842300	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
			3399113101	3911311	3911311			
3391137	25991	25991	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
3391137100	2599100	2599100	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113W pt.	25990 pt.	25990 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3499800 pt.	3499800 pt
			3399113YWW	3911300	3911300	3399140YWW pt.	3961000	3961000
339113W pt.	38420 pt.	38420 pt				3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3499002 pt.	3499002 pt
339113WYWW pt.	3842000 pt.	3842000 pt						
339113WYWW pt.	2599002 pt.	2599002 pt						
339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323276 pt	3944499 pt	3944499	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323346	3944436	3944436	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323561	3944437	3944437	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399323566	3944443	3944443			
3399201YVW	3949100	3949100	3399323YVW	3944400	3944400			
			3399325	39445	39445	3399503	39932	39932
3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203206	3949241	3949241	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993222
3399203311	3949245	3949245	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993252 pt
3399203416	3949247	3949247	3399325121	3944521	3944521	3399503106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993288 pt
			3399325236	3944530	3944530	3399503111 pt	3993205 pt	3993232
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993262 pt
3399205101	3949301	3949301						
3399205106	3949302	3949302						
3399205YVW	3949300	3949300						
			3399327	39446	39446	3399503111 pt	3993205 pt	3993278 pt
3399207	39494	39494	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207101	3949401	3949401	3399327101 pt	3944615 pt	3944618	3399503116 pt	3993207 pt	3993252 pt
3399207111	3949411	3949402 pt	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993272 pt
3399207121	3949421	3949406 pt	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949403 pt	3399327221	3944695	3944695	3399503121 pt	3993209 pt	3993278 pt
3399207131 pt	3949431 pt	3949406 pt	3399327226	3944696	3944696	3399503126 pt	3993211 pt	3993252 pt
3399207141	3949441	3949406 pt	3399327YVW	3944600	3944600	3399503126 pt	3993211 pt	3993272 pt
3399207151	3949451	3949406 pt				3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949404 pt	3399329	39447	39447	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949405 pt	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993200
3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503126 pt	3993211 pt	3993288 pt
3399207YVW	3949400	3949400	3399329100 pt	3944718 pt	3944714	3399503YVW	3993200	3993200
			3399329100 pt	3944718 pt	3944716			
3399209	39495	39495	339932W	39440 pt	39440 pt	3399505	39933	39933
3399209101	3949511	3949511	339932WYVW	3944000 pt	3944000 pt	3399505101	3993311	3993300 pt
3399209106	3949515	3949515	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
3399209111	3949527	3949527				3399505YVW	3993300	3993300 pt
3399209116	3949528	3949528	3399411	39511	39511			
339920911A	3949569	3949569	3399411101	3951102	3951102	339950W	39930	39930
339920911F	3949575	3949575	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911K	3949577	3949577	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911P	3949581	3949593 pt	3399411YVW	3951100	3951100			
339920911U	3949592	3949592				3399911	30534	30534
339920911Y	3949583	3949593 pt	3399413	39512	39512	3399911111	3053415	3053415
			3399413101	3951202	3951202	3399911121 pt	3053419 pt	3053411
3399209121	3949530	3949530	3399413206	3951206	3951206	3399911121 pt	3053419 pt	3053418
3399209126	3949536	3949536	3399413YVW	3951200	3951200	3399911YVW	3053400	3053400
339920912A	3949596	3949596						
339920912F	3949594	3949594	3399415	39513	39513	3399913	30535	30535
339920912K	3949595	3949595	3399415101	3951305	3951305	3399913111	3053515	3053515
339920912P	3949597	3949597	3399415106	3951310	3951310	3399913221	3053524	3053531 pt
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1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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Ophthalmic Goods Manufacturing

1997

Issued November 1999

EC97M-3391E

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Ophthalmic Goods Manufacturing

1997

Issued November 1999

EC97M-3391E

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339115	Ophthalmic goods mfg	520	575	26 366	814 242	17 936	36 389	456 771	2 511 264	1 084 122	3 607 813	238 237
385100	Ophthalmic goods	N	575	26 366	814 242	17 936	36 389	456 771	2 511 264	1 084 122	3 607 813	238 237

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339115, OPHTHALMIC GOODS MFG												
United States	1	575	159	26 366	814 242	17 936	36 389	456 771	2 511 264	1 084 122	3 607 813	238 237
California	-	81	26	4 765	164 422	3 076	6 481	90 302	702 242	295 990	987 458	36 638
Colorado	4	17	4	299	6 446	220	359	3 816	16 294	8 153	24 489	1 007
Florida	-	39	14	4 436	163 101	2 912	6 321	79 196	653 955	185 802	838 512	50 382
Illinois	-	32	5	978	29 791	421	820	6 598	123 790	85 248	200 862	15 997
Indiana	4	7	2	118	2 485	86	137	1 445	6 378	3 938	10 358	495
Maryland	-	10	3	229	7 797	146	258	4 897	2 606	15 865	21 369	1 186
Massachusetts	1	29	13	1 882	56 520	1 079	2 092	22 520	132 557	57 789	194 390	7 607
Michigan	3	24	4	224	7 940	155	274	3 855	15 740	8 106	23 659	1 014
Minnesota	-	16	12	1 607	39 192	1 185	2 157	24 106	95 091	66 676	157 697	9 081
Missouri	1	9	5	318	7 198	225	452	5 084	18 049	12 164	28 948	1 421
Nevada	8	4	2	124	2 497	79	157	1 441	6 658	3 476	9 446	842
New Jersey	9	21	5	663	13 925	432	888	7 467	34 429	16 347	50 954	4 737
New York	1	47	14	3 730	146 435	2 949	7 075	109 629	355 633	64 868	418 238	58 926
Ohio	1	25	5	460	9 806	320	608	5 604	21 124	14 571	35 876	1 722
Oklahoma	-	10	3	228	4 605	160	248	2 724	16 605	6 841	23 913	1 326
Oregon	1	9	3	266	5 420	158	329	3 363	13 478	9 825	23 333	733
Pennsylvania	5	31	6	565	12 932	436	873	8 668	30 783	19 337	49 276	4 822
Tennessee	8	9	3	229	4 625	140	199	2 478	10 959	6 882	17 675	1 509
Texas	1	33	6	1 360	25 234	849	1 473	14 178	53 483	74 900	122 239	5 870
Virginia	-	10	3	647	17 519	389	758	6 891	29 052	15 507	42 881	5 090

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339115, OPHTHALMIC GOODS MFG		339115, OPHTHALMIC GOODS MFG—Con.	
Companies ¹	number.. 520	Value added	\$1,000.. 2 511 264
All establishments	number.. 575	Total inventories, beginning of year	\$1,000.. 554 808
Establishments with 1 to 19 employees	number.. 416	Finished goods inventories, beginning of year	\$1,000.. 378 190
Establishments with 20 to 99 employees	number.. 105	Work-in-process inventories, beginning of year	\$1,000.. 70 277
Establishments with 100 employees or more	number.. 54	Materials and supplies inventories, beginning of year	\$1,000.. 106 341
All employees	number.. 26 366	Total inventories, end of year	\$1,000.. 560 802
Total compensation ²	\$1,000.. 1 012 230	Finished goods inventories, end of year	\$1,000.. 384 176
Annual payroll	\$1,000.. 814 242	Work-in-process inventories, end of year	\$1,000.. 51 864
Total fringe benefits	\$1,000.. 197 988	Materials and supplies inventories, end of year	\$1,000.. 124 762
Production workers, average for year	number.. 17 936	Gross book value of total assets at beginning of year	\$1,000.. 1 291 848
Production workers on March 12	number.. 17 964	Total capital expenditures (new and used)	\$1,000.. 238 237
Production workers on May 12	number.. 18 056	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 36 746
Production workers on August 12	number.. 17 821	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 201 491
Production workers on November 12	number.. 17 903	Total retirements ²	\$1,000.. 54 841
Production-worker hours	1,000.. 36 389	Gross book value of total assets at end of year	\$1,000.. 1 475 244
Production-worker wages	\$1,000.. 456 771	Total depreciation during year ²	\$1,000.. 145 342
Total cost of materials	\$1,000.. 1 084 122	Total rental payments ²	\$1,000.. 38 327
Cost of materials, parts, containers, etc., consumed	\$1,000.. 817 135	Buildings and other structures rental payments ²	\$1,000.. 23 395
Cost of resales	\$1,000.. 165 166	Machinery and equipment rental payments ²	\$1,000.. 14 932
Cost of fuels	\$1,000.. 4 349	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 5 292
Cost of purchased electricity	\$1,000.. 30 127	Response coverage ratio ⁴	percent.. 73
Cost of contract work	\$1,000.. 67 345	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 26 213
Quantity of electricity purchased for heat and power	1,000 kWh.. 446 658	Response coverage ratio ⁴	percent.. 73
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Cost of purchased communications services ³	\$1,000.. 10 398
Total value of shipments	\$1,000.. 3 607 813	Response coverage ratio ⁴	percent.. 73
Primary products value of shipments	\$1,000.. 3 325 875	Cost of purchased legal services ³	\$1,000.. 7 129
Secondary products value of shipments	\$1,000.. 52 230	Response coverage ratio ⁴	percent.. 73
Total miscellaneous receipts	\$1,000.. 229 708	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 387
Value of resales	\$1,000.. 216 514	Response coverage ratio ⁴	percent.. 73
Contract receipts	\$1,000.. 7 458	Cost of purchased advertising services ³	\$1,000.. 82 451
Other miscellaneous receipts	\$1,000.. 5 736	Response coverage ratio ⁴	percent.. 73
Primary products specialization ratio	percent.. 98	Cost of purchased software and other data processing services ³	\$1,000.. 5 648
Value of primary products shipments made in all industries	\$1,000.. 3 352 086	Response coverage ratio ⁴	percent.. 73
Value of primary products shipments made in this industry	\$1,000.. 3 325 875	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 875
Value of primary products shipments made in other industries	\$1,000.. 26 211	Response coverage ratio ⁴	percent.. 73
Coverage ratio	percent.. 99		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339115, OPHTHALMIC GOODS MFG												
All establishments	1	575	159	26 366	814 242	17 936	36 389	456 771	2 511 264	1 084 122	3 607 813	238 237
Establishments with 1 to 4 employees	7	242	—	497	12 585	363	573	7 233	30 931	23 194	56 859	4 419
Establishments with 5 to 9 employees	7	91	—	630	16 626	404	757	8 686	39 266	22 378	61 854	5 027
Establishments with 10 to 19 employees	4	83	—	1 115	25 415	724	1 193	13 926	61 513	33 569	96 069	5 872
Establishments with 20 to 49 employees	3	66	66	2 012	50 604	1 336	2 471	27 694	117 902	73 143	191 434	12 251
Establishments with 50 to 99 employees	3	39	39	2 907	73 070	2 010	3 691	39 770	156 731	101 294	257 023	15 774
Establishments with 100 to 249 employees	1	31	31	4 717	120 697	3 039	6 288	64 856	331 760	161 451	493 561	28 740
Establishments with 250 to 499 employees	—	14	14	5 078	160 660	3 766	7 502	97 159	608 355	259 388	867 100	39 160
Establishments with 500 to 999 employees	—	6	6	5 043	169 161	3 272	6 595	83 714	533 907	256 907	750 379	61 033
Establishments with 1,000 to 2,499 employees	—	3	3	4 367	185 424	3 022	7 319	113 733	630 899	152 798	833 534	65 961
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	300	—	1 191	26 094	817	1 241	14 530	65 683	36 776	102 725	9 890

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339115	Ophthalmic goods mfg ...	575	26 366	814 242	17 936	36 389	456 771	2 511 264	1 084 122	3 607 813	238 237
3391151	Ophthalmic fronts and temples	12	933	26 068	694	1 390	15 720	86 615	43 456	132 056	4 064
3391153	Glass ophthalmic focus lenses	10	911	21 702	737	1 301	16 910	48 442	50 263	97 623	6 638
3391155	Plastics ophthalmic focus lenses	48	5 380	148 712	3 773	7 865	89 150	441 873	239 362	659 670	31 587
3391157	Contact lenses	39	8 676	328 450	5 795	12 980	180 388	1 213 214	301 432	1 549 020	126 360
339115B	Ophthalmic goods (except fronts, temples, and lenses) and grinding of lenses to prescription (except 1-hour labs)	71	6 293	193 127	4 173	7 879	101 384	487 723	327 070	814 991	35 304

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339115	Ophthalmic goods	N	X	X	3 352 086	N	X	X	2 389 992
3391151	Ophthalmic fronts and temples	N	X	X	122 982	N	X	X	174 503
33911511	Eyeglass frames, without lenses inserted, and frame parts	N	X	X	121 370	N	X	X	N
3391151101	Plastic ophthalmic finished fronts (with or without decoration)	10	X	X	68 710	16	X	X	73 214
3391151106	Other ophthalmic finished fronts (with or without decoration)	8	X	X	36 413	6	X	X	37 317
3391151111	Plastic ophthalmic temples	6	X	X	6 241	10	X	X	36 948
3391151116	Other ophthalmic temples	5	X	X	10 006	5	X	X	20 075
3391151Y	Ophthalmic fronts and temples, nsk	N	X	X	1 612	N	X	X	N
3391151YVV	Ophthalmic fronts and temples, nsk	N	X	X	1 612	N	X	X	6 949
3391153	Glass ophthalmic focus lenses	N	X	X	106 607	N	X	X	158 055
33911531	Glass ophthalmic lenses	N	X	X	98 035	N	X	X	N
3391153101	Glass ophthalmic single vision lenses (ground and polished and molded blanks)	22	X	X	32 776	17	X	X	62 029
3391153106	Glass ophthalmic multifocal lenses (finished, semifinished, and molded blanks)	18	X	X	65 259	15	X	X	92 714
3391153Y	Glass ophthalmic focus lenses, nsk	N	X	X	8 572	N	X	X	N
3391153YVV	Glass ophthalmic focus lenses, nsk	N	X	X	8 572	N	X	X	3 312
3391155	Plastics ophthalmic focus lenses	N	X	X	602 249	N	X	X	424 871
33911551	Plastic single vision lenses	N	X	X	234 313	N	X	X	N
3391155101	Plastic ophthalmic single vision lenses	37	X	X	234 313	29	X	X	192 929
33911552	Plastic multifocal lenses	N	X	X	367 936	N	X	X	N
3391155206	Plastic ophthalmic multifocal lenses	29	X	X	367 936	23	X	X	230 913
3391155Y	Plastic ophthalmic focus lenses, nsk	N	X	X	—	N	X	X	N
3391155YVV	Plastic ophthalmic focus lenses, nsk	N	X	X	—	N	X	X	1 029
3391157	Contact lenses	N	X	X	1 440 702	N	X	X	923 720
33911571	Hard contact lenses	N	X	X	65 459	N	X	X	N
3391157101	Conventional (hard) contact lenses	23	X	X	65 459	29	X	X	94 636
33911572	Soft contact lenses	N	X	X	1 375 243	N	X	X	N
3391157206	Soft contact lenses	22	X	X	1 375 243	20	X	X	829 032
3391157Y	Contact lenses, nsk	N	X	X	—	N	X	X	N
3391157YVV	Contact lenses, nsk	N	X	X	—	N	X	X	52
339115B	Ophthalmic goods (except fronts, temples, and lenses) and grinding of lenses to prescription (except 1-hour labs)	N	X	X	742 135	N	X	X	403 077
339115B1	Ophthalmic goods (except fronts, temples, and lenses) and grinding of lenses to prescription (except 1-hour labs)	N	X	X	704 911	N	X	X	N
339115B101	Ophthalmic goods, industrial goggles, eye protectors, welding circles and plates, and mountings	16	X	X	158 194	14	X	X	99 754
339115B106	Ophthalmic goods, ready-made sun or glare glasses, sunglasses, and magnifying or reading glasses	14	X	X	332 651	N	X	X	N
339115B111	Ophthalmic goods, parts for frames and mounting, except fronts and temples	3	X	X	3 362	11	X	X	42 400
339115B116	Other ophthalmic plastic goods	13	X	X	40 542	20	X	X	48 688
339115B121	Other ophthalmic goods	14	X	X	38 904	10	X	X	50 709
339115B125	Prescription grinding of lenses (except 1-hour labs)	26	X	X	131 258	N	X	X	N
339115BY	Ophthalmic goods (except fronts, temples, and lenses), nsk	N	X	X	37 224	N	X	X	N
339115BYVV	Ophthalmic goods (except fronts, temples, and lenses), nsk	N	X	X	37 224	N	X	X	N
339115W	Ophthalmic goods, nsk, total	N	X	X	337 411	N	X	X	305 766
339115WY	Ophthalmic goods, nsk, total	N	X	X	337 411	N	X	X	N
339115WYVV	Ophthalmic goods manufacturing, nsk, for nonadministrative-record establishments	N	X	X	241 639	N	X	X	248 628
339115WYVY	Ophthalmic goods manufacturing, nsk, for administrative-record establishments	N	X	X	95 772	N	X	X	57 138

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3391151	OPHTHALMIC FRONTS AND TEMPLES		
	United States	122 982	174 503
	Massachusetts	2 512	N
	Ohio	5 190	N
3391153	GLASS OPHTHALMIC FOCUS LENSES		
	United States	106 607	158 055
	California	10 303	N
3391155	PLASTICS OPHTHALMIC FOCUS LENSES		
	United States	602 249	424 871
	California	355 681	184 001
	Florida	72 898	72 891
	Minnesota	65 694	28 327
	Ohio	8 597	N
	Pennsylvania	3 203	N
3391157	CONTACT LENSES		
	United States	1 440 702	923 720
	California	220 450	N
339115B	OPHTHALMIC GOODS (EXCEPT FRONTS, TEMPLES, AND LENSES) AND GRINDING OF LENSES TO PRESCRIPTION (EXCEPT 1-HOUR LABS)		
	United States	742 135	403 077
	California	243 854	18 024
	Florida	35 061	49 001
	Massachusetts	78 038	72 645
	Minnesota	24 978	N
	Nevada	3 751	N
	New York	72 231	81 151
	Ohio	12 107	9 008
	Oregon	5 689	N
	Pennsylvania	21 892	25 943
	Wisconsin	3 037	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339115	OPHTHALMIC GOODS MFG				
32721211	Lens blanks, optical and ophthalmic	X	199 058	X	144 688
33331403	Lenses and prisms for optical instruments, and sighting and fire control equipment	X	D	X	11 728
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	65 372	X	55 026
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	53 512	X	47 997
32221001	Paperboard containers, boxes, and corrugated paperboard	X	D	X	12 479
00970099	All other materials and components, parts, containers, and supplies	X	241 307	X	153 214
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	205 525	X	123 805

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339115 OPHTHALMIC GOODS MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing ophthalmic goods. Examples of products made by these establishments are prescription eyeglasses (except manufactured in a retail setting), contact lenses, sunglasses, eyeglass frames, and reading glasses made to standard powers.

The data published with NAICS code 339115 include the following SIC industry:

3851 Ophthalmic goods

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt				3399121101	3914111	3914111
3391121661	3841196	3841196				3399121106	3914131	3914131
3391121766	3841199	3841199				3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100				3399121121	3914153	3914153
			339114W pt.	38430	38430	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWW pt.	3699000 pt.	3699000 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWW pt.	3843000	3843000			
3391123111	3841293	3841293	339114WYWW pt.	3699002 pt.	3699002 pt			
3391123116	3841296	3841296	339114WYWW pt.	3843002	3843002			
3391123YWV	3841200	3841200						
339112W pt.	38290 pt.	38290 pt	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
			3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
339112W pt.	38410	38410	3391151106	3851117	3851117	3399123106	3914211	3914211
339112WYWW pt.	3829000 pt.	3829000 pt	3391151111	3851118	3851118	3399123111	3914235	3914235
339112WYWW pt.	3841000	3841000	3391151116	3851119	3851119	3399123116	3914241	3914241
339112WYWW pt.	3829002 pt.	3829002 pt	3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112WYWW pt.	3841002	3841002				3399123126	3914275	3914270 pt
						3399123126	3479024	3479021 pt
3391131	38421 pt.	38421 pt	3391153	38514	38514	3399123YWV pt.	3479000 pt.	3479000 pt
339113101	3842101	3842101	3391153101	3851431	3851431	3399123YWV pt.	3914200 pt.	3914200 pt
339113104	3842102	3842102	3391153106	3851445	3851445			
3391131207	3842104	3842104	3391153YWV	3851400	3851400	339912W pt.	34790 pt.	34790 pt
3391131211	3842105	3842105						
3391131214	3842106	3842106	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
3391131217	3842107	3842107	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131217	3842108	3842108	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131224	3842109	3842109	3391155YWV	3851500	3851500	339912WYWW pt.	3479002 pt.	3479002 pt
3391131227	3842110	3842110				339912WYWW pt.	3914002 pt.	3914002 pt
3391131231	3842112	3842112	3391157	38516	38516			
			3391157101	3851612	3851612	3399131	39152	39152
			3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
			3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
						3399131100 pt.	3915200 pt.	3915233
3391131234	3842113	3842113	339115B	38517	38517			
3391131337	3842122	3842122	339115B101	3851702	3851702	3399133	39153	39153
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt			
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135	39154	39154
3391131571	3842165	3842165				3399135100	3915400	3915400
3391131574	3842183	3842183	339115W	38510	38510	339913W	39150	39150
3391131577	3842185	3842185	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131581	3842187	3842187	339115WYWW	3851002	3851002	339913WYWW	3915002	3915002
3391131584	3842189	3842189						
3391131587	3842191	3842191	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131591	3842197	3842197	3391160100 pt.	8072001	8072000 pt			
3391131594	3842198	3842198	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131YWV	3842100 pt.	3842100 pt	3391160YWW	8072000 pt.	8072000 pt			
			3391160YWY	8072002	8072000 pt			
3391135	38423	38423	3399111	39111	39111	3399140 pt.	39610	39610
3391135101	3842311	3842311	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135121	3842361	3842361	3399111526	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135126	3842373	3842373	3399111531	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135YWV	3842300	3842300	3399111536	3911198	3911198	3399140216	3961051	3961051
			3399111YWV	3911100	3911100	3399140221	3961072	3961072
3391137	25991	25991				3399140226 pt.	3479026	3479021 pt
3391137100	2599100	2599100				3399140226 pt.	3961098 pt.	3961096
339113W pt.	25990 pt.	25990 pt	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961099
			3399113101	3911311	3911311	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	38420 pt.	38420 pt	3399113106 pt.	3911315 pt.	3911321	3399140YWW pt.	3499000 pt.	3499000 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	3842000 pt.	3842000 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3961000	3961000
339113WYWW pt.	2599002 pt.	2599002 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	3842002 pt.	3842002 pt	3399113YWV	3911300	3911300	3399140YWW pt.	3499002 pt.	3499002 pt
						3399140YWW pt.	3961002	3961002
3391141 pt.	36992 pt.	36992 pt	3399115 pt.	34790 pt.	34790 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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Dental Laboratories

1997

Issued July 1999

EC97M-3391F

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339116	Dental laboratories	7 473	7 566	40 081	999 799	29 702	49 319	625 178	2 117 988	780 192	2 931 794	72 166
807200	Dental laboratories	N	7 566	40 081	999 799	29 702	49 319	625 178	2 117 988	780 192	2 931 794	72 166

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339116, DENTAL LABORATORIES												
United States	5	7 566	325	40 081	999 799	29 702	49 319	625 178	2 117 988	780 192	2 931 794	72 166
Arizona	5	144	7	746	19 555	550	939	12 966	43 394	16 041	61 049	1 453
Arkansas	5	48	1	330	8 805	233	416	4 964	16 441	5 518	22 089	1 600
California	5	1 096	41	5 912	155 842	4 295	7 487	95 547	301 140	110 526	416 495	9 930
Colorado	7	160	4	653	16 856	485	805	9 943	38 484	15 316	54 299	1 314
Florida	6	603	20	2 601	60 284	1 918	2 926	36 787	134 094	54 405	190 806	4 728
Georgia	6	241	12	1 591	41 592	1 226	2 086	25 355	85 599	30 955	116 591	3 308
Hawaii *	8	34	1	191	4 791	143	242	3 430	12 460	3 952	16 574	337
Idaho	5	42	-	157	3 509	123	190	2 329	8 087	3 439	11 417	315
Illinois	6	340	16	1 899	46 245	1 375	2 313	29 961	107 070	34 230	142 605	3 029
Indiana	6	150	9	949	21 971	695	1 107	14 101	50 551	16 255	67 748	1 699
Iowa	6	75	2	411	8 728	294	470	5 897	19 337	6 963	26 582	647
Kansas	2	60	10	675	16 592	532	821	11 832	35 989	9 992	46 112	859
Kentucky	5	85	3	339	7 802	272	441	5 506	16 749	6 264	23 169	522
Louisiana	5	92	3	490	11 557	378	616	7 062	25 759	9 981	36 169	647
Maryland	6	106	6	584	14 412	432	742	9 017	31 767	11 170	43 150	965
Massachusetts	7	130	7	668	17 573	498	796	11 340	37 940	15 135	53 616	1 084
Michigan	5	290	11	1 713	44 256	1 277	2 176	28 549	95 155	34 941	131 094	2 863
Minnesota	3	132	18	1 336	33 236	985	1 614	21 437	62 228	20 126	83 143	2 149
Mississippi	7	51	2	231	5 060	188	313	3 415	12 411	4 074	16 691	413
Missouri	5	149	10	862	20 271	619	952	12 487	44 146	15 955	60 831	1 292
Nebraska	4	43	2	272	6 537	201	357	3 950	12 509	4 504	17 109	432
Nevada	7	53	1	219	6 148	155	250	3 782	14 040	5 175	19 394	1 027
New Jersey	5	241	10	1 170	33 585	893	1 600	22 079	72 425	25 405	98 497	1 889
New York	5	483	25	2 643	68 960	1 955	3 295	42 111	146 256	56 403	206 625	4 883
North Carolina	6	244	5	1 033	26 120	771	1 298	16 130	60 434	20 776	82 735	1 885
North Dakota	5	14	2	183	4 636	142	212	2 645	7 028	3 062	10 231	556
Ohio	6	264	14	1 438	33 850	1 058	1 853	21 493	67 084	29 208	96 978	2 516
Oklahoma	7	89	-	284	6 440	224	334	4 256	14 695	6 162	21 079	643
Oregon	5	137	4	598	15 061	436	707	9 166	32 646	12 354	45 213	1 052
Pennsylvania	6	240	11	1 278	29 581	933	1 484	17 541	59 497	23 294	84 258	2 266
South Carolina	7	65	1	318	8 315	251	406	4 597	17 320	6 381	23 899	619
Tennessee	7	139	5	577	12 190	433	663	7 717	29 612	11 762	41 708	1 035
Texas	5	406	17	2 050	48 516	1 531	2 437	29 636	102 814	38 928	143 466	3 446
Utah	6	92	3	472	12 301	357	565	7 786	25 750	9 354	36 724	672
Virginia	6	153	6	720	17 334	530	843	10 810	36 397	13 923	50 905	1 110
Washington	6	268	9	1 152	31 227	874	1 361	19 441	66 257	25 091	92 960	2 354
Wisconsin	4	133	11	1 085	26 176	791	1 452	17 593	57 655	15 824	74 315	1 779

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339116, DENTAL LABORATORIES		339116, DENTAL LABORATORIES—Con.	
Companies ¹	7 473	Value added	\$1,000.. 2 117 988
All establishments	7 566	Total inventories, beginning of year	\$1,000.. S
Establishments with 1 to 19 employees	7 241	Finished goods inventories, beginning of year	\$1,000.. S
Establishments with 20 to 99 employees	314	Work-in-process inventories, beginning of year	\$1,000.. S
Establishments with 100 employees or more	11	Materials and supplies inventories, beginning of year	\$1,000.. S
All employees	40 081	Total inventories, end of year	\$1,000.. S
Total compensation ²	1 242 703	Finished goods inventories, end of year	\$1,000.. S
Annual payroll	999 799	Work-in-process inventories, end of year	\$1,000.. S
Total fringe benefits	242 904	Materials and supplies inventories, end of year	\$1,000.. S
Production workers, average for year	29 702	Gross book value of total assets at beginning of year	\$1,000.. S
Production workers on March 15	S	Total capital expenditures (new and used)	\$1,000.. 72 166
Production workers on May 15	S	Capital expenditures for buildings and other structures (new and used)	\$1,000.. S
Production workers on August 15	S	Capital expenditures for machinery and equipment (new and used)	\$1,000.. S
Production workers on November 15	S	Total retirements ²	\$1,000.. S
Production-worker hours	49 319	Gross book value of total assets at end of year	\$1,000.. S
Production-worker wages	625 178	Total depreciation during year ²	\$1,000.. S
Total cost of materials	780 192	Total rental payments ²	\$1,000.. S
Cost of materials, parts, containers, etc., consumed	\$1,000.. S	Buildings and other structures rental payments ²	\$1,000.. S
Cost of resales	\$1,000.. S	Machinery and equipment rental payments ²	\$1,000.. S
Cost of fuels	\$1,000.. S	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. S
Cost of purchased electricity	\$1,000.. S	Response coverage ratio ⁴	percent.. S
Cost of contract work	\$1,000.. S	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. S
Quantity of electricity purchased for heat and power	1,000 kWh.. S	Response coverage ratio ⁴	percent.. S
Quantity of electricity generated less sold for heat and power	1,000 kWh.. S	Cost of purchased communications services ³	\$1,000.. S
Total value of shipments	\$1,000.. 2 931 794	Response coverage ratio ⁴	percent.. S
Primary products value of shipments	\$1,000.. 2 650 198	Cost of purchased legal services ³	\$1,000.. S
Secondary products value of shipments	\$1,000.. 13 168	Response coverage ratio ⁴	percent.. S
Total miscellaneous receipts	\$1,000.. S	Cost of purchased accounting and bookkeeping services ³	\$1,000.. S
Value of resales	\$1,000.. S	Response coverage ratio ⁴	percent.. S
Contract receipts	\$1,000.. S	Cost of purchased advertising services ³	\$1,000.. S
Other miscellaneous receipts	\$1,000.. S	Response coverage ratio ⁴	percent.. S
Primary products specialization ratio	percent.. 99	Cost of purchased software and other data processing services ³	\$1,000.. S
Value of primary products shipments made in all industries	\$1,000.. 2 656 501	Response coverage ratio ⁴	percent.. S
Value of primary products shipments made in this industry	\$1,000.. 2 650 198	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. S
Value of primary products shipments made in other industries	\$1,000.. 6 303	Response coverage ratio ⁴	percent.. S
Coverage ratio	percent.. 99	Value added	\$1,000.. 2 117 988

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339116, DENTAL LABORATORIES												
All establishments	5	7 566	325	40 081	999 799	29 702	49 319	625 178	2 117 988	780 192	2 931 794	72 166
Establishments with 1 to 4 employees	9	5 326	—	10 132	223 779	7 543	10 128	114 328	573 073	280 975	864 019	24 090
Establishments with 5 to 9 employees	8	1 362	—	8 828	209 878	6 381	9 725	129 770	510 978	204 625	723 780	17 173
Establishments with 10 to 19 employees	5	553	—	7 327	189 634	5 741	10 195	135 989	416 869	118 947	543 903	10 614
Establishments with 20 to 49 employees	—	259	259	7 888	211 758	5 835	10 704	140 674	355 156	108 694	468 693	13 185
Establishments with 50 to 99 employees	—	55	55	3 729	102 443	2 705	5 244	62 615	167 549	48 505	218 558	3 966
Establishments with 100 to 249 employees	—	9	9	D	D	D	D	D	D	D	D	D
Establishments with 250 to 499 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	5 867	—	15 568	327 841	11 072	14 173	162 393	833 809	423 644	1 272 056	36 863

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339116	Dental laboratories	7 566	40 081	999 799	29 702	49 319	625 178	2 117 988	780 192	2 931 794	72 166

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339116	Dental laboratories	N	X	X	2 656 501	N	X	X	N
3391160	Dentures, artificial teeth, and orthodontic appliances manufactured to order for the dental profession (prescription basis)	N	X	X	2 656 501	N	X	X	N
33911601	Dentures, artificial teeth, and orthodontic appliances manufactured to order for the dental profession (prescription basis)	N	X	X	1 232 652	N	X	X	N
3391160100	Dentures, artificial teeth, and orthodontic appliances manufactured to order for the dental profession (prescription basis)	1 158	X	X	1 232 652	N	X	X	N
3391160Y	Dental laboratories, nsk, total	N	X	X	1 423 849	N	X	X	N
3391160YWW	Dental laboratories, nsk, for nonadministrative-record establishments	N	X	X	343 381	N	X	X	N
3391160YWY	Dental laboratories, nsk, for administrative-record establishments	N	X	X	1 080 468	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Not applicable for this report]

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers’ records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339116 DENTAL LABORATORIES

This U.S. industry comprises establishments primarily engaged in manufacturing dentures, crowns, bridges, and orthodontic appliances customized for individual application.

The data published with NAICS code 339116 include the following SIC industry:

8072 Dental laboratories

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
3391121 pt.	38295 pt.	38295 pt.	3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38411	38411	3391141122	3843106	3843106	3399115116	3911451	3911451
3391121101	3841112	3841112	3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121106	3841131	3841131	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121211	3841121	3841121	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121216	3841123	3841123	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121321	3841142	3841142	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121326	3841149	3841149	3391141YWV pt.	3843100	3843100	339911W pt.	34790 pt.	34790 pt
3391121431	3841185	3841185	3391143	38432	38432	339911W pt.	39110	39110
3391121536	3841186	3841186	3391143101	3843201	3843201	339911WYWW pt.	3479000 pt.	3479000 pt
3391121641	3841172	3841172	3391143106	3843202	3843202	339911WYWW pt.	3911000	3911000
3391121646	3841184	3841184	3391143111	3843203	3843203	339911WYWY pt.	3479002 pt.	3479002 pt
3391121651	3841187	3841187	3391143116	3843209	3843209	339911WYWY pt.	3911002	3911002
3391121656	3829510	3829500 pt	3391143121	3843219	3843219	3399121	39141 pt.	39141 pt
3391121661	3841196	3841196	3391143YWV	3843200	3843200	3399121101	3914111	3914111
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121106	3914131	3914131
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3841100	3841100	339114W pt.	38430	38430	3399121116	3914143	3914143
3391123	38412	38412	339114WYWW pt.	3699000 pt.	3699000 pt	3399121121	3914153	3914153
3391123106	3841291	3841291	339114WYWW pt.	3843000	3843000	3399121126	3914175	3914170 pt
3391123111	3841293	3841293	339114WYWY pt.	3699002 pt.	3699002 pt	3399121YWV	3914100	3914100
3391123116	3841296	3841296	339114WYWY pt.	3843002	3843002	3399123 pt.	34790 pt.	34790 pt
3391123YWV	3841200	3841200	3391151	38511	38511	3399123 pt.	39142 pt.	39142 pt
339112W pt.	38290 pt.	38290 pt	3391151101	3851115	3851115	3399123101	3914211	3914211
339112W pt.	38410	38410	3391151106	3851117	3851117	3399123106	3914235	3914235
339112WYWW pt.	3829000 pt.	3829000 pt	3391151111	3851118	3851118	3399123111	3914241	3914241
339112WYWW pt.	3841000	3841000	3391151116	3851119	3851119	3399123116	3914243	3914243
339112WYWY pt.	3829002 pt.	3829002 pt	3391151YWV	3851100	3851100	3399123121	3914275	3914270 pt
339112WYWY pt.	3841002	3841002	3391153	38514	38514	3399123126	3479024	3479021 pt
3391131	38421 pt.	38421 pt	3391153101	3851431	3851431	3399123YWV pt.	3479000 pt.	3479000 pt
339113101	3842101	3842101	3391153106	3851445	3851445	3399123YWV pt.	3914200 pt.	3914200 pt
339113104	3842102	3842102	3391153YWV	3851400	3851400	339912W pt.	34790 pt.	34790 pt
3391131207	3842104	3842104	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
3391131211	3842105	3842105	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131214	3842106	3842106	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131217	3842107	3842107	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt.	3479002 pt
3391131217	3842108	3842108	3391157	38516	38516	339912WYWY pt.	3914002 pt.	3914002 pt
3391131224	3842109	3842109	3391157101	3851612	3851612	3399131	39152	39152
3391131227	3842110	3842110	3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
3391131231	3842112	3842112	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
3391131234	3842113	3842113	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
3391131337	3842122	3842122	339115B101	3851702	3851702	3399133	39153	39153
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt	3399135	39154	39154
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135100	3915400	3915400
3391131571	3842165	3842165	339115W	38510	38510	339913W	39150	39150
3391131574	3842183	3842183	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131577	3842185	3842185	339115WYWY	3851002	3851002	339913WYWY	3915002	3915002
3391131581	3842187	3842187	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131584	3842189	3842189	3391160100 pt.	8072001	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131587	3842191	3842191	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWW	8072000 pt.	8072000 pt	3399140 pt.	34998 pt.	34998 pt
3391131594	3842198	3842198	3391160YWY	8072002	8072000 pt	3399140 pt.	39610	39610
3391131YWV	3842100 pt.	3842100 pt	3399111	39111	39111	3399140111 pt.	3961032 pt.	3961031
3391135	38423	38423	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961041 pt
3391135101	3842311	3842311	3399111206	3911112	3911112	3399140118	3499895	3499899 pt
3391135106	3842321	3842321	3399111311	3911114	3911114	3399140201	3961011	3961011
3391135111	3842322	3842322	3399111421 pt.	3911121 pt.	3911131	3399140206 pt.	3961022 pt.	3961021
3391135116	3842351	3842351	3399111526	3911115	3911115	3399140206 pt.	3961022 pt.	3961041 pt
3391135121	3842361	3842361	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135126	3842373	3842373	3399111YWV	3911100	3911100	3399140221	3961072	3961072
3391135YWV	3842300	3842300	3399113	39113	39113	3399140226 pt.	3479026 pt.	3479021 pt
3391137	25991	25991	3399113101	3911311	3911311	3399140226 pt.	3961098 pt.	3961096
3391137100	2599100	2599100	3399113106 pt.	3911315 pt.	3911321	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	25990 pt.	25990 pt	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3499000 pt.	3499000 pt
339113W pt.	38420 pt.	38420 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWW pt.	3842000 pt.	3842000 pt	3399113YWV	3911300	3911300	3399140YWY pt.	3479002 pt.	3479002 pt
339113WYWY pt.	2599002 pt.	2599002 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWY pt.	3499002 pt.	3499002 pt
339113WYWY pt.	3842002 pt.	3842002 pt				3399140YWY pt.	3961002	3961002
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323346	3944436	3944436	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399323566	3944443	3944443			
3399201YVW	3949100	3949100	3399323YVW	3944400	3944400			
			3399325	39445	39445	3399503	39932	39932
3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
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Jewelry (Except Costume) Manufacturing

1997

Issued August 1999

EC97M-3399A

1997 Economic Census

Manufacturing

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Jewelry (Except Costume) Manufacturing

1997

Issued August 1999

EC97M-3399A

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339911	Jewelry (except costume) mfg	2 281	2 293	34 717	885 256	24 341	43 280	479 946	2 430 486	2 999 018	5 414 623	61 140
347920	Metal coating & allied services	N	22	79	1 620	64	102	1 138	3 996	1 808	5 798	323
391100	(pt) Jewelry, precious metal	N	2 271	34 638	883 636	24 277	43 178	478 808	2 426 490	2 997 210	5 408 825	60 817

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339911, JEWELRY (EXCEPT COSTUME) MFG												
United States	2	2 293	319	34 717	885 256	24 341	43 280	479 946	2 430 486	2 999 018	5 414 623	61 140
California	3	398	48	4 249	95 403	3 211	4 763	51 706	264 960	317 621	582 533	8 392
Colorado	7	37	4	299	6 601	203	303	3 130	17 571	16 171	33 716	166
Connecticut	3	14	3	215	5 646	123	210	2 550	11 720	20 246	31 154	295
Florida	5	132	11	842	17 538	599	862	9 452	46 873	48 795	96 991	1 071
Illinois	1	49	7	654	19 460	458	853	10 490	69 988	57 138	127 040	1 980
Indiana	1	20	5	438	12 964	351	668	10 138	46 662	19 593	66 037	592
Massachusetts	1	59	17	1 574	46 384	1 163	2 236	25 432	156 331	123 803	280 038	3 108
Michigan	7	27	2	214	5 199	137	251	2 762	14 928	16 183	30 637	322
Minnesota	6	21	3	394	9 863	232	481	5 097	23 018	25 645	47 554	517
New Jersey	2	62	12	1 594	51 055	1 080	1 946	24 289	121 371	186 490	308 107	3 549
New Mexico	4	104	19	1 789	31 874	1 343	2 112	19 431	77 176	59 924	134 616	1 254
New York	1	614	101	9 391	278 237	6 291	11 694	141 458	803 710	1 228 958	2 021 672	18 330
Ohio	1	32	3	243	7 358	142	238	2 948	16 442	25 319	42 708	228
Oregon	5	30	3	200	3 990	130	212	2 123	9 359	6 551	15 750	243
Pennsylvania	2	59	5	752	19 164	426	772	8 865	45 986	84 261	131 138	1 030
Rhode Island	2	144	35	3 371	83 666	2 454	4 942	45 385	220 267	216 456	437 989	5 505
Texas	2	106	14	2 478	55 434	1 833	3 713	38 108	127 191	129 625	256 570	3 791
Virginia	-	19	1	202	6 093	154	294	3 481	14 034	34 750	51 008	1 287
Washington	4	47	3	264	6 755	190	322	3 706	13 219	12 027	24 894	203

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339911, JEWELRY (EXCEPT COSTUME) MFG		339911, JEWELRY (EXCEPT COSTUME) MFG— Con.	
Companies ¹	number.. 2 281	Value added	\$1,000.. 2 430 486
All establishments	number.. 2 293	Total inventories, beginning of year	\$1,000.. 1 165 004
Establishments with 1 to 19 employees	number.. 1 974	Finished goods inventories, beginning of year	\$1,000.. 590 500
Establishments with 20 to 99 employees	number.. 261	Work-in-process inventories, beginning of year	\$1,000.. 199 947
Establishments with 100 employees or more	number.. 58	Materials and supplies inventories, beginning of year	\$1,000.. 374 557
All employees	number.. 34 717	Total inventories, end of year	\$1,000.. 1 174 533
Total compensation ²	\$1,000.. 1 052 542	Finished goods inventories, end of year	\$1,000.. 598 127
Annual payroll	\$1,000.. 885 256	Work-in-process inventories, end of year	\$1,000.. 207 201
Total fringe benefits	\$1,000.. 167 286	Materials and supplies inventories, end of year	\$1,000.. 369 205
Production workers, average for year	number.. 24 341	Gross book value of total assets at beginning of year	\$1,000.. 549 933
Production workers on March 15	number.. 24 124	Total capital expenditures (new and used)	\$1,000.. 61 140
Production workers on May 15	number.. 23 871	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 11 513
Production workers on August 15	number.. 24 064	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 49 627
Production workers on November 15	number.. 25 305	Total retirements ²	\$1,000.. 18 981
Production-worker hours	\$1,000.. 43 280	Gross book value of total assets at end of year	\$1,000.. 592 092
Production-worker wages	\$1,000.. 479 946	Total depreciation during year ²	\$1,000.. 57 554
Total cost of materials	\$1,000.. 2 999 018	Total rental payments ²	\$1,000.. 62 744
Cost of materials, parts, containers, etc., consumed	\$1,000.. 2 407 285	Buildings and other structures rental payments ²	\$1,000.. 37 547
Cost of resales	\$1,000.. 437 721	Machinery and equipment rental payments ²	\$1,000.. 25 197
Cost of fuels	\$1,000.. 6 875	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 2 376
Cost of purchased electricity	\$1,000.. 14 937	Response coverage ratio ⁴	percent.. 56
Cost of contract work	\$1,000.. 132 200	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 4 491
Quantity of electricity purchased for heat and power	1,000 kWh.. 187 107	Response coverage ratio ⁴	percent.. 56
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 10 545
Total value of shipments	\$1,000.. 5 414 623	Response coverage ratio ⁴	percent.. 56
Primary products value of shipments	\$1,000.. 4 654 158	Cost of purchased legal services ³	\$1,000.. 6 384
Secondary products value of shipments	\$1,000.. 135 469	Response coverage ratio ⁴	percent.. 56
Total miscellaneous receipts	\$1,000.. 624 996	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 8 960
Value of resales	\$1,000.. 562 852	Response coverage ratio ⁴	percent.. 56
Contract receipts	\$1,000.. 49 368	Cost of purchased advertising services ³	\$1,000.. 43 717
Other miscellaneous receipts	\$1,000.. 12 776	Response coverage ratio ⁴	percent.. 56
Primary products specialization ratio	percent.. 97	Cost of purchased software and other data processing services ³	\$1,000.. 4 578
Value of primary products shipments made in all industries	\$1,000.. 4 723 955	Response coverage ratio ⁴	percent.. 56
Value of primary products shipments made in this industry	\$1,000.. 4 654 158	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 2 899
Value of primary products shipments made in other industries	\$1,000.. 69 797	Response coverage ratio ⁴	percent.. 56
Coverage ratio	percent.. 98		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339911, JEWELRY (EXCEPT COSTUME) MFG												
All establishments	2	2 293	319	34 717	885 256	24 341	43 280	479 946	2 430 486	2 999 018	5 414 623	61 140
Establishments with 1 to 4 employees	8	1 280	—	2 531	51 286	1 879	2 618	27 855	158 420	171 036	327 172	3 397
Establishments with 5 to 9 employees	4	433	—	2 825	64 037	2 005	3 023	34 681	194 529	194 310	388 959	3 700
Establishments with 10 to 19 employees	3	261	—	3 491	84 163	2 456	3 906	44 190	227 783	224 862	449 424	3 735
Establishments with 20 to 49 employees	2	191	191	5 855	149 766	4 169	7 220	79 183	366 924	478 306	843 313	8 574
Establishments with 50 to 99 employees	3	70	70	4 872	128 323	3 421	5 956	67 367	358 978	430 368	782 856	9 984
Establishments with 100 to 249 employees	1	39	39	6 083	166 686	4 333	8 337	97 484	468 485	632 957	1 094 381	12 522
Establishments with 250 to 499 employees	—	14	14	4 451	124 407	2 927	5 981	61 677	404 531	457 944	857 535	9 243
Establishments with 500 to 999 employees	—	3	3	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	2	2	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	1 325	—	3 671	65 264	2 694	3 394	35 026	182 015	214 454	396 581	4 393

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339911	Jewelry (except costume) mfg	2 293	34 717	885 256	24 341	43 280	479 946	2 430 486	2 999 018	5 414 623	61 140
3399111	Jewelry, made of platinum metals and karat gold	495	22 132	617 190	15 215	28 992	333 162	1 693 589	2 250 605	3 943 735	45 110
3399113	Jewelry, made of silver (including platinum metals and karat gold clad to silver)	121	3 412	72 780	2 579	4 848	45 144	209 067	146 633	352 353	4 844
3399115	Other jewelry, except costume	57	1 890	50 277	1 318	2 228	23 959	136 002	165 402	289 133	1 964

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339911	Jewelry, precious metal	N	X	X	4 723 955	N	X	X	N
3399111	Jewelry, made of platinum metals and karat gold	N	X	X	3 236 128	N	X	X	2 639 582
33991111	Fraternal, college, and school rings made of platinum metals and karat gold (complete)	N	X	X	259 906	N	X	X	N
3399111101	Fraternal, college, and school rings made of platinum metals and karat gold (complete)	31	X	X	259 906	40	X	X	261 562
33991112	Wedding rings made of platinum metals and karat gold (complete)	N	X	X	419 472	N	X	X	N
3399111206	Wedding rings made of platinum metals and karat gold (complete)	122	X	X	419 472	133	X	X	408 383
33991113	Other rings made of platinum metals and karat gold	N	X	X	522 084	N	X	X	N
3399111311	Other rings made of platinum metals and karat gold	224	X	X	522 084	234	X	X	537 252
33991114	Women's and children's jewelry (necklaces, bracelets and watch bracelets, brooches, pins, clips, earrings, lockets, etc) made of platinum metals and karat gold	N	X	X	1 169 290	N	X	X	N
3399111421	Women's and children's jewelry (necklaces, bracelets and watch bracelets, brooches, pins, clips, earrings, lockets, etc) made of platinum metals and karat gold	242	X	X	1 169 290	N	X	X	N
33991115	Ring mountings, organizational and other jewelry worn or carried about the person, made of platinum metals and karat gold	N	X	X	785 367	N	X	X	N
3399111516	Ring mountings made of platinum metals and karat gold, for sale separately	47	X	X	103 747	74	X	X	132 920
3399111526	Organizational jewelry (fraternal, college, and school jewelry and emblems, and military insignia, excluding rings) made of platinum metals and karat gold	27	X	X	43 969	30	X	X	69 711
3399111531	Other jewelry worn or carried about the person (watch chains, rosaries, cigarette cases, lighters, compacts, etc) made of platinum metals and karat gold	130	X	X	637 651	94	X	X	241 570
3399111Y	Jewelry, made of platinum metals and karat gold, nsk	N	X	X	80 009	N	X	X	N
3399111YWV	Jewelry, made of platinum metals and karat gold, nsk	N	X	X	80 009	N	X	X	70 688
3399113	Jewelry, made of silver (including platinum metals and karat gold clad to silver)	N	X	X	406 244	N	X	X	236 346
33991131	Jewelry made of silver (including platinum metals and karat gold clad to silver)	N	X	X	390 602	N	X	X	N
3399113101	Rings and ring mountings made of silver (including platinum metals and karat gold clad to silver)	73	X	X	100 237	58	X	X	59 957
3399113106	Men's jewelry (collar and cuff buttons, studs, watch chains, money clips, watch and identification bracelets, scarf pins, etc) made of silver (including platinum metals and karat gold clad to silver)	28	X	X	29 468	N	X	X	N
3399113111	Women's and children's jewelry (necklaces, bracelets and watch bracelets, brooches, pins, clips, earrings, lockets, etc) made of silver (including platinum metals and karat gold clad to silver)	119	X	X	176 809	N	X	X	N
3399113116	Other jewelry worn or carried about the person (rosaries, cigarette cases, lighters, compacts, vanity cases, etc) made of silver (including platinum metals and karat gold clad to silver)	38	X	X	84 088	32	X	X	26 356
3399113Y	Jewelry made of silver (including platinum metals and karat gold clad to silver), nsk	N	X	X	15 642	N	X	X	N
3399113YWV	Jewelry made of silver (including platinum metals and karat gold clad to silver), nsk	N	X	X	15 642	N	X	X	2 029
3399115	Other jewelry, except costume	N	X	X	456 493	N	X	X	N
33991151	Other jewelry, except costume	N	X	X	453 840	N	X	X	N
3399115101	Other rings and ring mountings (except costume) made of base metal clad with precious metal	17	X	X	65 055	18	X	X	22 968
3399115106	Other men's jewelry (collar and cuff buttons, studs, watch chains and bracelets, money clips, identification bracelets, scarf pins, etc, except costume) made of base metal clad with precious metal	15	X	X	16 514	N	X	X	N

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339911	Jewelry, precious metal—Con.								
3399115	Other jewelry, except costume—Con.								
33991151	Other jewelry, except costume—Con.								
3399115111	Other women's and children's jewelry (necklaces, bracelets and watch bracelets, brooches, pins, clips, earrings, lockets, etc, except costume) made of base metal clad with precious metal	39	X	X	141 470	N	X	X	N
3399115116	Other jewelry, including cigarette lighters (except costume) made of base metal clad with precious metal, and engraving and etching on precious metal jewelry	14	X	X	34 829	9	X	X	N
3399115118	Engraving and etching on precious metal jewelry	1	X	X	210	N	X	X	N
3399115121	Jewelry of semiprecious or precious stones, and natural or cultured pearls	53	X	X	195 762	N	X	X	N
3399115Y	Other jewelry, except costume, nsk	N	X	X	2 653	N	X	X	N
3399115YWV	Other jewelry, except costume, nsk	N	X	X	2 653	N	X	X	N
339911W	Jewelry, precious metals, nsk, total	N	X	X	625 090	N	X	X	N
339911WY	Jewelry, precious metal, nsk, total	N	X	X	625 090	N	X	X	N
339911WYWW	Jewelry, precious metal, nsk, for nonadministrative-record establishments	N	X	X	298 812	N	X	X	N
339911WYWY	Jewelry, precious metal, nsk, for administrative-record establishments	N	X	X	326 278	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399111	JEWELRY, MADE OF PLATINUM METALS AND KARAT GOLD		
	United States	3 236 128	2 639 582
	California	377 797	309 889
	Colorado	16 623	2 518
	Florida	39 680	129 027
	Georgia	4 212	N
	Hawaii	17 973	17 583
	Illinois	67 463	61 594
	Massachusetts	183 457	198 107
	Michigan	27 250	5 061
	Minnesota	39 413	N
	Missouri	3 164	3 788
	New Jersey	214 338	164 925
	New Mexico	24 822	18 536
	New York	1 324 418	1 078 311
	North Carolina	3 903	N
	Ohio	29 879	23 187
	Oregon	3 528	3 786
	Pennsylvania	86 573	40 564
	Rhode Island	213 761	205 250
	South Dakota	69 249	58 299
	Texas	176 829	108 840
	Washington	8 976	5 476

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399113	JEWELRY, MADE OF SILVER (INCLUDING PLATINUM METALS AND KARAT GOLD CLAD TO SILVER)		
	United States	406 244	236 346
	California	39 559	19 471
	Colorado	2 020	2 083
	Massachusetts	21 241	14 655
	New Jersey	8 114	N
	New Mexico	65 517	49 299
	New York	103 716	41 770
	Pennsylvania	8 247	N
	Rhode Island	55 060	42 203
	South Dakota	13 726	13 190
	Texas	19 361	19 942
	Utah	7 175	N
	3399115	OTHER JEWELRY, EXCEPT COSTUME	
United States		456 493	N
California		30 382	N
Massachusetts		46 431	N
New Jersey		3 136	N
New Mexico		2 289	N
New York		207 523	N
Pennsylvania		5 192	N
Rhode Island		50 220	N
Texas		19 355	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339911	JEWELRY (EXCEPT COSTUME) MFG				
33200005	Fabricated metal products, including forgings	X	49 867	X	N
33100035	Castings (rough and semifinished)	X	D	X	N
32500067	Other chemicals and allied products	X	D	X	N
33141901	Precious metals (gold, platinum, etc.), all forms, including ingot, sheet, strip, solder, plating, electrodes, etc.	X	685 781	X	N
33100027	Other shapes and forms, including castings	X	93 262	X	N
33991303	Precious, semiprecious, and synthetic stones, and pearls; cut, polished, or drilled	X	495 920	X	N
33991301	Jewelers' findings, including joints, pins, clasps, chains, flat stock, etc.	X	94 531	X	N
33990000	Other jewelry, silverware, and plated ware	X	79 532	X	N
00970099	All other materials and components, parts, containers, and supplies	X	207 920	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	694 309	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339911 JEWELRY (EXCEPT COSTUME) MANUFACTURING

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing, engraving, chasing, or etching precious metal solid or precious metal clad jewelry; (2) manufacturing, engraving, chasing, or etching personal goods (i.e., small articles carried on or about the person, such as compacts or cigarette cases) made of precious solid or clad metal; and (3) stamping coins.

The data published with NAICS code 339911 include the following SIC industries:

- 3479 Metal coating and allied services (pt)
- 3911 Jewelry, precious metal

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	3391144W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	3391144W pt.	38430	38430	3399121101	3914111	3914111
3391121661	3841196	3841196	3391144YWW pt.	3699000 pt.	3699000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	3391144YWW pt.	3843000	3843000	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	3391144YWW pt.	3699002 pt.	3699002 pt	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	3391144YWW pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWW	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWW	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWW	3851400	3851400	3399123YWW pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
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Silverware and Plated Ware Manufacturing

1997

Issued August 1999

EC97M-3399B

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Silverware and Plated Ware Manufacturing

1997

Issued August 1999

EC97M-3399B

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339912	Silverware & plated ware mfg . .	159	162	6 439	186 686	4 550	7 240	108 199	538 496	383 454	904 229	19 860
347930	Metal coating & allied services (pt)	N	12	103	2 091	66	122	1 260	4 515	1 793	6 296	283
391420	Silverware & plated ware (pt)	N	150	6 336	184 595	4 484	7 118	106 939	533 981	381 661	897 933	19 577

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339912, SILVERWARE & PLATED WARE MFG												
United States	-	162	45	6 439	186 686	4 550	7 240	108 199	538 496	383 454	904 229	19 860
California	-	18	3	372	9 959	228	468	3 851	21 634	9 659	31 299	866
Massachusetts	-	12	7	1 060	45 390	454	936	12 093	94 257	158 312	244 629	3 696
New Jersey	-	7	4	187	5 533	111	249	3 069	17 136	10 683	27 904	310
Rhode Island	-	6	6	512	14 574	425	1 008	8 626	27 361	23 642	53 746	1 206

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339912, SILVERWARE & PLATED WARE MFG		339912, SILVERWARE & PLATED WARE MFG— Con.	
Companies ¹	number.. 159	Value added	\$1,000.. 538 496
All establishments	number.. 162	Total inventories, beginning of year	\$1,000.. 208 494
Establishments with 1 to 19 employees	number.. 117	Finished goods inventories, beginning of year	\$1,000.. 144 619
Establishments with 20 to 99 employees	number.. 34	Work-in-process inventories, beginning of year	\$1,000.. 26 467
Establishments with 100 employees or more	number.. 11	Materials and supplies inventories, beginning of year	\$1,000.. 37 408
All employees	number.. 6 439	Total inventories, end of year	\$1,000.. 225 380
Total compensation ²	\$1,000.. 227 388	Finished goods inventories, end of year	\$1,000.. 164 045
Annual payroll	\$1,000.. 186 686	Work-in-process inventories, end of year	\$1,000.. 24 762
Total fringe benefits	\$1,000.. 40 702	Materials and supplies inventories, end of year	\$1,000.. 36 573
Production workers, average for year	number.. 4 550	Gross book value of total assets at beginning of year	\$1,000.. 236 744
Production workers on March 15	number.. 4 594	Total capital expenditures (new and used)	\$1,000.. 19 860
Production workers on May 15	number.. 4 488	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 4 703
Production workers on August 15	number.. 4 498	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 15 157
Production workers on November 15	number.. 4 620	Total retirements ²	\$1,000.. 5 074
Production-worker hours	\$1,000.. 7 240	Gross book value of total assets at end of year	\$1,000.. 251 530
Production-worker wages	\$1,000.. 108 199	Total depreciation during year ²	\$1,000.. 12 773
Total cost of materials	\$1,000.. 383 454	Total rental payments ²	\$1,000.. 6 734
Cost of materials, parts, containers, etc., consumed	\$1,000.. 253 925	Buildings and other structures rental payments ²	\$1,000.. 4 678
Cost of resales	\$1,000.. 112 108	Machinery and equipment rental payments ²	\$1,000.. 2 056
Cost of fuels	\$1,000.. 1 951	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 1 377
Cost of purchased electricity	\$1,000.. 4 699	Response coverage ratio ⁴	percent.. 91
Cost of contract work	\$1,000.. 10 771	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 6 858
Quantity of electricity purchased for heat and power	1,000 kWh.. 90 596	Response coverage ratio ⁴	percent.. 91
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 1 772
Total value of shipments	\$1,000.. 904 229	Response coverage ratio ⁴	percent.. 91
Primary products value of shipments	\$1,000.. 615 025	Cost of purchased legal services ³	\$1,000.. 1 327
Secondary products value of shipments	\$1,000.. 103 763	Response coverage ratio ⁴	percent.. 91
Total miscellaneous receipts	\$1,000.. 185 441	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 3 060
Value of resales	\$1,000.. 183 087	Response coverage ratio ⁴	percent.. 91
Contract receipts	\$1,000.. D	Cost of purchased advertising services ³	\$1,000.. 8 105
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 91
Primary products specialization ratio	percent.. 85	Cost of purchased software and other data processing services ³	\$1,000.. 1 244
Value of primary products shipments made in all industries	\$1,000.. 618 286	Response coverage ratio ⁴	percent.. 91
Value of primary products shipments made in this industry	\$1,000.. 615 025	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 722
Value of primary products shipments made in other industries	\$1,000.. 3 261	Response coverage ratio ⁴	percent.. 91
Coverage ratio	percent.. 99		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339912, SILVERWARE & PLATED WARE MFG												
All establishments	-	162	45	6 439	186 686	4 550	7 240	108 199	538 496	383 454	904 229	19 860
Establishments with 1 to 4 employees	9	66	-	112	2 441	84	131	1 381	5 517	3 387	8 887	213
Establishments with 5 to 9 employees	4	22	-	148	3 723	96	169	2 228	7 583	4 204	11 861	237
Establishments with 10 to 19 employees	1	29	-	387	9 436	266	490	5 423	21 014	12 869	33 356	655
Establishments with 20 to 49 employees	1	23	23	709	18 651	460	852	9 735	34 547	23 709	60 728	3 913
Establishments with 50 to 99 employees	-	11	11	689	19 799	465	978	10 339	54 216	29 430	85 099	758
Establishments with 100 to 249 employees	-	7	7	1 065	29 930	787	1 645	15 635	55 902	39 116	99 005	2 092
Establishments with 250 to 499 employees	-	3	3	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 1,000 to 2,499 employees	-	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	65	-	198	4 462	136	226	2 463	10 124	6 141	16 208	398

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339912	Silverware & plated ware mfg	162	6 439	186 686	4 550	7 240	108 199	538 496	383 454	904 229	19 860
3399121	Hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	58	2 600	66 030	1 781	3 695	35 729	143 708	95 846	243 378	6 349
3399123	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal)	16	3 417	111 622	2 492	3 106	67 512	375 347	276 419	630 104	12 818

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339912	Silverware and platedware	N	X	X	618 286	N	X	X	N
3399121	Hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	N	X	X	233 023	N	X	X	N
33991211	Hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	N	X	X	225 495	N	X	X	N
3399121101	Sterling silver hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	10	X	X	16 625	12	X	X	16 932
3399121106	Electrosilverplated hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	12	X	X	32 958	16	X	X	49 682
3399121111	Precious metal hollowware, other than silver, whether or not clad with precious metal (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	5	X	X	15 316	7	X	X	3 035
3399121116	Precious metal-clad base metal hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	9	X	X	24 153	5	X	X	6 508
3399121121	Pewter hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware)	23	X	X	67 301	28	X	X	79 598
3399121126	Unplated hollowware of other metals (including stainless steel)	17	X	X	69 142	N	X	X	N
3399121Y	Hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware), nsk	N	X	X	7 528	N	X	X	N
3399121YVV	Hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other platedware), nsk	N	X	X	7 528	N	X	X	25 054
3399123	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal)	N	X	X	352 740	N	X	X	N
33991231	Engraving and etching on silver and platedware	N	X	X	352 740	N	X	X	N
3399123101	Sterling silver flatware (including all knives, forks, spoons, and carving sets made wholly of metal)	7	X	X	64 996	6	X	X	N
3399123106	Electrosilverplated flatware (including all knives, forks, spoons, and carving sets made wholly of metal)	5	X	X	55 095	3	X	X	N
3399123111	Flatware made of precious metal other than silver, whether or not clad with precious metal (including all knives, forks, spoons, and carving sets made wholly of metal)	2	X	X	D	2	X	X	N
3399123116	Flatware made of base metal clad with precious metal (including all knives, forks, spoons, and carving sets made wholly of metal)	2	X	X	D	1	X	X	N
3399123121	Engraving and etching on silver and platedware	7	X	X	D	N	X	X	N
3399123126	Engraving and etching on silver and platedware	4	X	X	4 737	N	X	X	N
3399123Y	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal), nsk	N	X	X	-	N	X	X	N
3399123YVV	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal), nsk	N	X	X	-	N	X	X	N
339912W	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal), nsk, total	N	X	X	32 523	N	X	X	N
339912WY	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal), nsk, total	N	X	X	32 523	N	X	X	N
339912WYVV	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal), nsk, for nonadministrative-record establishments	N	X	X	18 497	N	X	X	N
339912WYVY	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal), nsk, for administrative-record establishments	N	X	X	14 026	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399121	HOLLOWWARE (INCLUDING TOILETWARE, ECCLESIASTICAL WARE, NOVELTIES, TROPHIES, BABY GOODS, AND OTHER PLATEDWARE)		
	United States	233 023	N
	California	19 212	N
	Connecticut	4 658	N
	Illinois	16 280	N
	Massachusetts	38 555	N
	New Jersey	24 300	N
	New York	33 584	N
3399123	FLATWARE (INCLUDING ALL KNIVES, FORKS, SPOONS, AND CARVING SETS MADE WHOLLY OF METAL)		
	United States	352 740	N
	Massachusetts	81 054	N
	Ohio	4 498	N
	Rhode Island	27 092	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339912	SILVERWARE & PLATED WARE MFG				
33100035	Castings (rough and semifinished)	X	6 037	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
331000AJ	Nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	D	X	N
33200081	Fabricated metal products (except forgings)	X	24 054	X	N
33210001	Forgings	X	D	X	N
33100003	Metal shapes and forms (except precious metals, castings, forgings, and fabricated metal products)	X	D	X	N
33141901	Precious metals (gold, platinum, etc.), all forms, including ingot, sheet, strip, solder, plating, electrodes, etc.	X	62 023	X	N
00970099	All other materials and components, parts, containers, and supplies	X	106 054	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	20 747	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339912 SILVERWARE AND HOLLOWARE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing, engraving, chasing, or etching precious metal solid, precious metal clad, or pewter flatware and other plated ware.

The data published with NAICS code 339912 include the following SIC industries:

- 3479 Metal coating and allied services (pt)
- 3914 Silverware and plated ware (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3843000 pt.	3843000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3699002 pt.	3699002 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114WYWW pt.	3843002	3843002	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114YWV pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWV	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWV	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWV	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWV	3851400	3851400	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWV	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWV	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
						339913W	39150	39150
3391131574	3842183	3842183	3391160	80720	80720	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160100 pt.	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWW	8072000 pt.	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160YWV	8072002	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWV	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131YWV	3842100 pt.	3842100 pt	3399111	39111	39111	3399140 pt.	39610	39610
			3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135	38423	38423	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135101	3842311	3842311	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135106	3842321	3842321	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135111	3842322	3842322	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135116	3842351	3842351	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135121	3842361	3842361	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135126	3842373	3842373	3399111YWV	3911100	3911100	3399140221	3961072	3961072
3391135YWV	3842300	3842300				3399140226 pt.	3479026 pt.	3479021 pt
			3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
3391137	25991	25991	3399113101	3911311	3911311			
3391137100	2599100	2599100	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
			3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	25990 pt.	25990 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
			3399113116 pt.	3911317 pt.	3911341 pt	3399140YWW pt.	3499800 pt.	3499800 pt
339113W pt.	38420 pt.	38420 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWW pt.	2599000 pt.	2599000 pt	3399113YWV	3911300	3911300	3399140YWV pt.	3479002 pt.	3479002 pt
339113WYWW pt.	3842000 pt.	3842000 pt				3399140YWV pt.	3499002 pt.	3499002 pt
339113WYWW pt.	2599002 pt.	2599002 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWV pt.	3961002	3961002
339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399325	39445	39445	3399503	39932	39932
3399201YVW	3949100	3949100	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203	39492	39492	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203101	3949231	3949231	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203206	3949241	3949241	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203311	3949245	3949245	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203416	3949247	3949247	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325236	3944530	3944530	3399503111 pt	3993205 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301	3399327	39446	39446	3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993278 pt
3399205YVW	3949300	3949300	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207	39494	39494	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993252 pt
3399207101	3949401	3949401	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993272 pt
3399207111	3949411	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993207 pt	3993276 pt
3399207121	3949421	3949406 pt	3399327221	3944695	3944695	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949402 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949403 pt	3399327YVW	3944600	3944600	3399503121 pt	3993209 pt	3993278 pt
3399207131 pt	3949431 pt	3949406 pt	3399329	39447	39447	3399503126 pt	3993211 pt	3993252 pt
3399207141	3949441	3949406 pt	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993272 pt
3399207151	3949451	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949404 pt	3399329100 pt	3944718 pt	3944714	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949405 pt	3399329100 pt	3944718 pt	3944716	3399503YVW	3993200	3993200
3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944716	3399505	39933	39933
3399207YVW	3949400	3949400	339932W	39440 pt	39440 pt	33995050101	3993311	3993300 pt
3399209	39495	39495	339932WYVW	3944000 pt	3944000 pt	3399505106	3993351	3993300 pt
3399209101	3949511	3949511	339932WYVW	3944002 pt	3944002 pt	3399505YVW	3993300	3993300 pt
3399209106	3949515	3949515	3399411	39511	39511	339950W	39930	39930
3399209111	3949527	3949527	3399411101	3951102	3951102	339950WYVW	3993000	3993000
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993002	3993002
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3399323256	3944439	3944439						

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3399941 pt.....	23924 pt.....	23924 pt.....						

Jewelers' Material and Lapidary Work Manufacturing

1997

Issued August 1999

EC97M-3399C

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339913	Jewelers' material & lapidary work mfg	391	392	5 373	134 891	3 605	6 694	70 884	305 379	619 779	917 633	11 598
391500	Jewelers' materials & lapidary work	N	392	5 373	134 891	3 605	6 694	70 884	305 379	619 779	917 633	11 598

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339913, JEWELERS' MATERIAL & LAPIDARY WORK MFG												
United States	1	392	59	5 373	134 891	3 605	6 694	70 884	305 379	619 779	917 633	11 598
California	3	39	4	260	5 079	186	234	2 590	12 666	29 950	42 129	643
Florida	8	18	1	148	3 834	109	251	2 691	13 369	10 148	23 391	108
New Jersey	-	12	5	192	5 991	146	309	3 280	14 533	26 643	41 115	475
New York	1	131	20	1 323	36 753	903	1 548	17 369	93 688	302 169	391 267	1 925
Rhode Island	1	103	21	2 127	46 849	1 406	2 711	27 414	106 174	134 849	239 293	3 411

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339913, JEWELERS' MATERIAL & LAPIDARY WORK MFG		339913, JEWELERS' MATERIAL & LAPIDARY WORK MFG—Con.	
Companies ¹	number.. 391	Value added	\$1,000.. 305 379
All establishments	number.. 392	Total inventories, beginning of year	\$1,000.. 227 560
Establishments with 1 to 19 employees	number.. 333	Finished goods inventories, beginning of year	\$1,000.. 160 318
Establishments with 20 to 99 employees	number.. 49	Work-in-process inventories, beginning of year	\$1,000.. 25 475
Establishments with 100 employees or more	number.. 10	Materials and supplies inventories, beginning of year	\$1,000.. 41 767
All employees	number.. 5 373	Total inventories, end of year	\$1,000.. 220 782
Total compensation ²	\$1,000.. 165 945	Finished goods inventories, end of year	\$1,000.. 163 212
Annual payroll	\$1,000.. 134 891	Work-in-process inventories, end of year	\$1,000.. 30 106
Total fringe benefits	\$1,000.. 31 054	Materials and supplies inventories, end of year	\$1,000.. 27 464
Production workers, average for year	number.. 3 605	Gross book value of total assets at beginning of year	\$1,000.. 113 354
Production workers on March 15	number.. 3 573	Total capital expenditures (new and used)	\$1,000.. 11 598
Production workers on May 15	number.. 3 559	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 790
Production workers on August 15	number.. 3 609	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 10 808
Production workers on November 15	number.. 3 679	Total retirements ²	\$1,000.. 2 707
Production-worker hours	1,000.. 6 694	Gross book value of total assets at end of year	\$1,000.. 122 245
Production-worker wages	\$1,000.. 70 884	Total depreciation during year ²	\$1,000.. 8 207
Total cost of materials	\$1,000.. 619 779	Total rental payments ²	\$1,000.. 8 727
Cost of materials, parts, containers, etc., consumed	\$1,000.. 549 167	Buildings and other structures rental payments ²	\$1,000.. 6 010
Cost of resales	\$1,000.. 49 048	Machinery and equipment rental payments ²	\$1,000.. 2 717
Cost of fuels	\$1,000.. 1 549	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 164
Cost of purchased electricity	\$1,000.. 3 297	Response coverage ratio ⁴	percent.. 66
Cost of contract work	\$1,000.. 16 718	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 2 277
Quantity of electricity purchased for heat and power	1,000 kWh.. 35 454	Response coverage ratio ⁴	percent.. 66
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 4 646
Total value of shipments	\$1,000.. 917 633	Response coverage ratio ⁴	percent.. 66
Primary products value of shipments	\$1,000.. 797 951	Cost of purchased legal services ³	\$1,000.. 1 257
Secondary products value of shipments	\$1,000.. 37 838	Response coverage ratio ⁴	percent.. 66
Total miscellaneous receipts	\$1,000.. 81 844	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 986
Value of resales	\$1,000.. 62 419	Response coverage ratio ⁴	percent.. 66
Contract receipts	\$1,000.. 18 048	Cost of purchased advertising services ³	\$1,000.. 4 667
Other miscellaneous receipts	\$1,000.. 1 377	Response coverage ratio ⁴	percent.. 66
Primary products specialization ratio	percent.. 95	Cost of purchased software and other data processing services ³	\$1,000.. 529
Value of primary products shipments made in all industries	\$1,000.. 873 740	Response coverage ratio ⁴	percent.. 66
Value of primary products shipments made in this industry	\$1,000.. 797 951	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 406
Value of primary products shipments made in other industries	\$1,000.. 75 789	Response coverage ratio ⁴	percent.. 66
Coverage ratio	percent.. 91		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)	
	E ¹	Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
339913, JEWELERS' MATERIAL & LAPIDARY WORK MFG												
All establishments	1	392	59	5 373	134 891	3 605	6 694	70 884	305 379	619 779	917 633	11 598
Establishments with 1 to 4 employees	8	237	—	447	8 893	326	445	4 652	23 979	45 979	68 549	817
Establishments with 5 to 9 employees	6	63	—	410	8 245	250	357	4 254	17 373	32 285	48 660	614
Establishments with 10 to 19 employees	2	33	—	434	10 150	267	434	5 213	30 620	50 172	79 239	496
Establishments with 20 to 49 employees	1	37	37	1 082	29 060	741	1 303	14 516	63 017	242 093	303 969	2 007
Establishments with 50 to 99 employees	1	12	12	856	22 870	579	1 092	11 656	54 360	70 111	124 184	1 247
Establishments with 100 to 249 employees	—	7	7	1 018	24 889	741	1 368	14 052	59 232	93 774	151 980	1 871
Establishments with 250 to 499 employees	—	3	3	1 126	30 784	701	1 695	16 541	56 798	85 365	141 052	4 546
Establishments with 500 to 999 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	246	—	719	12 928	464	606	6 558	33 152	60 960	92 351	1 273

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339913	Jewelers' material & lapidary work mfg	392	5 373	134 891	3 605	6 694	70 884	305 379	619 779	917 633	11 598
3399131	Lapidary work and diamond cutting and polishing	30	811	27 241	452	992	11 689	70 389	236 305	300 477	1 816
3399133	Jewelers' findings and materials of precious metal	50	2 860	72 206	2 003	3 963	40 238	152 636	270 370	423 758	7 222
3399135	Jewelers' findings and shop-stock products made of base metal not clad with precious metal	21	495	11 618	334	542	5 590	19 027	19 242	37 830	527

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339913	Jewelers' materials and lapidary work	N	X	X	873 740	N	X	X	866 455
3399131	Diamonds (including industrial) and other natural precious, semiprecious, and synthetic stones (including the drilling of pearls) cut or polished in the plant from own materials for jewelry purposes	N	X	X	253 173	N	X	X	152 541
33991311	Diamonds (including industrial) and other natural precious, semiprecious, and synthetic stones (including the drilling of pearls) cut or polished in the plant from own materials for jewelry purposes	N	X	X	253 173	N	X	X	N
3399131100	Diamonds (including industrial) and other natural precious, semiprecious, and synthetic stones (including the drilling of pearls) cut or polished in the plant from own materials for jewelry purposes	29	X	X	253 173	N	X	X	N
3399133	Jewelers' findings and materials of precious metal	N	X	X	426 111	N	X	X	548 675
33991331	Jewelers' findings and materials of platinum and karat gold, except machine chain	N	X	X	292 153	N	X	X	N
3399133101	Jewelers' findings and materials of platinum and karat gold, except machine chain	42	X	X	292 153	43	X	X	281 202
33991332	Jewelers' machine chain of platinum and karat gold, and findings and materials of silver	N	X	X	113 890	N	X	X	N
3399133206	Jewelers' machine chain of platinum and karat gold	14	X	X	40 019	11	X	X	80 592
3399133211	Jewelers' findings and materials of silver	26	X	X	73 871	25	X	X	19 750
33991333	Jewelers' findings and materials made of base metal clad with precious metal	N	X	X	15 386	N	X	X	N
3399133316	Jewelers' findings and materials made of base metal clad with precious metal	17	X	X	15 386	20	X	X	164 579
3399133Y	Jewelers' findings and materials of precious metal, nsk	N	X	X	4 682	N	X	X	N
3399133YVW	Jewelers' findings and materials of precious metal, nsk	N	X	X	4 682	N	X	X	2 552
3399135	Jewelers' findings and shop-stock products made of base metal not clad with precious metal	N	X	X	69 348	N	X	X	89 395
33991351	Jewelers' findings and shop-stock products made of base metal not clad with precious metal	N	X	X	69 348	N	X	X	N
3399135100	Jewelers' findings and shop-stock products made of base metal not clad with precious metal	33	X	X	69 348	45	X	X	89 395
339913W	Jewelers' materials and lapidary work, nsk, total	N	X	X	125 108	N	X	X	75 844
339913WY	Jewelers' materials and lapidary work, nsk, total	N	X	X	125 108	N	X	X	N
339913WYVW	Jewelers' materials and lapidary work, nsk, for nonadministrative-record establishments	N	X	X	40 695	N	X	X	44 674
339913WYWY	Jewelers' materials and lapidary work, nsk, for administrative-record establishments	N	X	X	84 413	N	X	X	31 170

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399131	DIAMONDS (INCLUDING INDUSTRIAL) AND OTHER NATURAL PRECIOUS, SEMIPRECIOUS, AND SYNTHETIC STONES (INCLUDING THE DRILLING OF PEARLS) CUT OR POLISHED IN THE PLANT FROM OWN MATERIALS FOR JEWELRY PURPOSES		
	United States	253 173	152 541
	New York	217 218	133 921
3399133	JEWELERS' FINDINGS AND MATERIALS OF PRECIOUS METAL		
	United States	426 111	548 675
	New Jersey	23 126	39 036
	New York	83 148	284 480
	Rhode Island	153 919	81 277
3399135	JEWELERS' FINDINGS AND SHOP-STOCK PRODUCTS MADE OF BASE METAL NOT CLAD WITH PRECIOUS METAL		
	United States	69 348	89 395
	Massachusetts	2 223	6 773
	New York	14 905	N
	Rhode Island	50 106	70 920

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339913	JEWELERS' MATERIAL & LAPIDARY WORK MFG				
3320005	Fabricated metal products, including forgings	X	D	X	22 278
33141901	Precious metals (gold, platinum, etc.), all forms, including ingot, sheet, strip, solder, plating, electrodes, etc.	X	125 272	X	122 961
33100027	Other shapes and forms, including castings	X	D	X	5 913
33991303	Precious, semiprecious, and synthetic stones, and pearls; cut, polished, or drilled	X	176 935	X	127 352
33991301	Jewelers' findings, including joints, pins, clasps, chains, flat stock, etc.	X	31 921	X	18 003
33990000	Other jewelry, silverware, and plated ware	X	40 795	X	171
00970099	All other materials and components, parts, containers, and supplies	X	5 948	X	10 251
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	126 590	X	167 334

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339913 JEWELERS' MATERIAL AND LAPIDARY WORK MANUFACTURING

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing unassembled jewelry parts and stock shop products, such as sheet, wire, and tubing; (2) cutting, slabbing, tumbling, carving, engraving, polishing or faceting precious or

semiprecious stones and gems; (3) recutting, repolishing, and setting gem stones; and (4) drilling, sawing, and peeling cultured pearls.

The data published with NAICS code 339913 include the following SIC industry:

3915 Jewelers' materials and lapidary work

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114W pt.	36990 pt.	36990 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114WYWW pt.	3699000 pt.	3699000 pt	3399121121	3914153	3914153
			339114WYWW pt.	3699000 pt.	3699000 pt	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWY pt.	3699002 pt.	3699002 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWY pt.	3699002 pt.	3699002 pt			
3391123111	3841293	3841293	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
3391123YWV	3841200	3841200	3391151106	3851117	3851117	3399123106	3914211	3914211
			3391151111	3851118	3851118	3399123111	3914235	3914235
339112W pt.	38290 pt.	38290 pt	3391151116	3851119	3851119	3399123116	3914241	3914241
			3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112W pt.	38410	38410				3399123126	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153	38514	38514	3399123YWV pt.	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153101	3851431	3851431	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWY pt.	3829002 pt.	3829002 pt	3391153106	3851445	3851445	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWY pt.	3841002	3841002	3391153YWV	3851400	3851400			
						339912W pt.	34790 pt.	34790 pt
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131207	3842104	3842104	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt.	3479002 pt
3391131211	3842105	3842105				339912WYWY pt.	3914002 pt.	3914002 pt
3391131214	3842106	3842106	3391157	38516	38516			
3391131217	3842107	3842107	3391157101	3851612	3851612	3399131	39152	39152
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
3391131224	3842109	3842109	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915233
3391131231	3842112	3842112	339115B	38517	38517			
			339115B101	3851702	3851702	3399133	39153	39153
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt			
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135	39154	39154
3391131571	3842165	3842165				3399135100	3915400	3915400
			339115W	38510	38510	339913W	39150	39150
3391131574	3842183	3842183	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131577	3842185	3842185	339115WYWY	3851002	3851002	339913WYWY	3915002	3915002
3391131581	3842187	3842187						
3391131584	3842189	3842189	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160100 pt.	8072001	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131594	3842198	3842198	3391160YWW	8072000 pt.	8072000 pt			
3391131YWV	3842100 pt.	3842100 pt	3391160YWY	8072002	8072000 pt	3399140 pt.	34998 pt.	34998 pt
3391135	38423	38423	3399111	39111	39111	3399140 pt.	39610	39610
3391135101	3842311	3842311	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135121	3842361	3842361	3399111526	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135126	3842373	3842373	3399111531	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135YWV	3842300	3842300	3399111537	3911198	3911198	3399140216	3961051	3961051
			3399111YWV	3911100	3911100	3399140221	3961072	3961072
3391137	25991	25991				3399140226 pt.	3479026	3479021 pt
3391137100	2599100	2599100	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
			3399113101	3911311	3911311			
339113W pt.	25990 pt.	25990 pt	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
			3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	38420 pt.	38420 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113111 pt.	3911317 pt.	3911331 pt	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	3842000 pt.	3842000 pt	3399113116	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWY pt.	2599002 pt.	2599002 pt	3399113YWV	3911300	3911300	3399140YWY pt.	3479002 pt.	3479002 pt
339113WYWY pt.	3842002 pt.	3842002 pt				3399140YWY pt.	3499002 pt.	3499002 pt
			3399115 pt.	34790 pt.	34790 pt	3399140YWY pt.	3961002	3961002

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399927.....	39314.....	39314.....	3399941 pt.....	39911.....	39911.....	339995W.....	39950.....	39950.....
3399927116 pt.....	3931437 pt.....	3931450.....	3399941101.....	3991113.....	3991113.....	339995WYWWW.....	3995000.....	3995000.....
3399927116 pt.....	3931437 pt.....	3931452.....	3399941106.....	3991198.....	3991198.....	339995WYWY.....	3995002.....	3995002.....
3399927201.....	3931413.....	3931413.....	3399941311.....	2392471.....	2392471.....			
3399927206.....	3931415.....	3931415.....	3399941316.....	2392473.....	2392473.....	3399991.....	39991.....	39991.....
3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
3399927221.....	3931488.....	3931488.....	3399941YVW pt.....	2392400 pt.....	2392400 pt.....	3399991106.....	3999117.....	3999117.....
3399927226.....	3931498.....	3931498.....	3399941YVW pt.....	3991100.....	3991100.....	3399991111.....	3999140.....	3999140.....
3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
3399927YVW.....	3931400.....	3931400.....	3399943.....	39912.....	39912.....	3399991121.....	3999171.....	3999171.....
			3399943101 pt.....	3991251 pt.....	3991211.....	3399991YVW.....	3999100.....	3999100.....
339992W.....	39310.....	39310.....	3399943101 pt.....	3991251 pt.....	3991233.....			
339992WYWWW.....	3931000.....	3931000.....	3399943206.....	3991243.....	3991243.....	3399993.....	39992.....	39992.....
339992WYWY.....	3931002.....	3931002.....	3399943211 pt.....	3991253 pt.....	3991281.....	3399993101.....	3999222.....	3999222.....
			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
3399931 pt.....	31310 pt.....	31310 pt.....	3399943211 pt.....	3991253 pt.....	3991285.....	3399993YVW.....	3999200.....	3999200.....
			3399943YVW.....	3991200.....	3991200.....			
3399931 pt.....	39651.....	39651.....				3399995.....	39994.....	39994.....
3399931101 pt.....	3965131 pt.....	3965101.....	3399945.....	39913.....	39913.....	3399995100.....	3999400.....	3999400.....
3399931101 pt.....	3965131 pt.....	3965109.....	3399945101.....	3991321.....	3991321.....			
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3399931106 pt.....	3965133 pt.....	3965119.....	3399945106 pt.....	3991328 pt.....	3991329.....	3399997100.....	3999700.....	3999700.....
3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
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3399931111 pt.....	3965135 pt.....	3965129.....	3399945221.....	3991343.....	3991343.....	3399999101.....	3999813.....	3999813.....
3399931YVW pt.....	3131000 pt.....	3131000 pt.....	3399945226.....	3991398.....	3991398.....	3399999106 pt.....	3999816 pt.....	3999816.....
3399933YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
						3399999YVW.....	3999800.....	3999800.....
3399933.....	39654.....	39654.....						
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3399933101 pt.....	3965441 pt.....	3965423.....				339999C101.....	2499111.....	2499111.....
3399933106 pt.....	3965443 pt.....	3965431.....	339994W pt.....	39910.....	39910.....	339999C206.....	2499161.....	2499161.....
3399933106 pt.....	3965443 pt.....	3965433.....	339994WYVW pt.....	2392000 pt.....	2392000 pt.....	339999C311.....	2499115.....	2499115.....
3399933106 pt.....	3965443 pt.....	3965439.....	339994WYVW pt.....	2392002 pt.....	2392002 pt.....	339999C316.....	2499171.....	2499171.....
3399933YVW.....	3965400.....	3965400.....	339994WYVW pt.....	3991002.....	3991002.....	339999CYVW.....	2499100 pt.....	2499100 pt.....
3399935.....	39656.....	39656.....				339999H.....	39999 pt.....	39999 pt.....
3399935101.....	3965620.....	3965620.....	3399951.....	39951.....	39951.....	339999H101.....	3999907.....	3999907.....
3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
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3399935116.....	3965651.....	3965651.....	3399951YVW.....	3995100.....	3995100.....	339999H121.....	3999981.....	3999981.....
3399935121.....	3965671.....	3965671.....				339999H151 pt.....	3999997 pt.....	3999913 pt.....
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3399935126 pt.....	3965691 pt.....	3965689.....	3399953101.....	3995211.....	3995211.....	339999H151 pt.....	3999997 pt.....	3999944 pt.....
3399935YVW.....	3965600.....	3965600.....	3399953106.....	3995252.....	3995252.....	339999H151 pt.....	3999997 pt.....	3999999 pt.....
			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
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			3399955.....	39953.....	39953.....			
339993W pt.....	39650.....	39650.....	3399955100 pt.....	3995300 pt.....	3995300.....	339999W pt.....	39990 pt.....	39990 pt.....
339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
339993WYWY pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYWWW pt.....	3999000 pt.....	3999000 pt.....
339993WYWY pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYWY pt.....	2499002 pt.....	2499002 pt.....
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3399941 pt.....	23924 pt.....	23924 pt.....						

Costume Jewelry and Novelty Manufacturing

1997

Issued September 1999

EC97M-3399D

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Costume Jewelry and Novelty Manufacturing

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339914	Costume jewelry & novelty mfg	916	923	14 541	325 480	10 575	20 300	186 570	791 854	469 811	1 264 830	20 468
347940	Metal coating & allied services (pt)	N	17	29	669	26	43	474	1 518	738	2 257	144
349970	Fabricated metal products, n.e.c. (pt)	N	80	537	10 230	427	568	6 861	18 838	20 594	39 133	999
396100	Costume jewelry	N	826	13 975	314 581	10 122	19 689	179 235	771 498	448 479	1 223 440	19 325

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339914, COSTUME JEWELRY & NOVELTY MFG												
United States	2	923	141	14 541	325 480	10 575	20 300	186 570	791 854	469 811	1 264 830	20 468
California	1	102	11	2 014	42 023	1 470	3 431	27 105	119 964	37 356	152 144	1 595
Florida	6	38	3	218	3 689	157	266	2 278	7 985	3 838	12 201	306
New Jersey	7	17	1	109	2 360	81	138	1 251	4 736	2 782	7 452	154
New Mexico	7	26	4	313	5 943	220	412	3 541	20 938	9 846	29 910	325
Ohio	2	18	2	202	3 832	158	303	2 288	9 432	6 109	15 233	731
Pennsylvania	2	15	1	100	1 826	46	75	695	3 409	3 479	6 777	167
Rhode Island	2	281	59	6 418	158 524	4 559	8 613	85 425	383 868	251 739	634 920	11 920
Texas	5	40	5	265	4 902	216	361	3 065	10 291	7 024	17 063	197
Wisconsin	1	15	1	140	4 206	118	172	3 063	6 691	2 694	9 515	120

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339914, COSTUME JEWELRY & NOVELTY MFG		339914, COSTUME JEWELRY & NOVELTY MFG— Con.	
Companies ¹	916	Value added	\$1,000.. 791 854
All establishments	923	Total inventories, beginning of year	\$1,000.. 211 396
Establishments with 1 to 19 employees	782	Finished goods inventories, beginning of year	\$1,000.. 110 459
Establishments with 20 to 99 employees	117	Work-in-process inventories, beginning of year	\$1,000.. 32 659
Establishments with 100 employees or more	24	Materials and supplies inventories, beginning of year	\$1,000.. 68 278
All employees	14 541	Total inventories, end of year	\$1,000.. 199 831
Total compensation ²	395 082	Finished goods inventories, end of year	\$1,000.. 102 736
Annual payroll	325 480	Work-in-process inventories, end of year	\$1,000.. 37 217
Total fringe benefits	69 602	Materials and supplies inventories, end of year	\$1,000.. 59 878
Production workers, average for year	10 575	Gross book value of total assets at beginning of year	\$1,000.. 200 612
Production workers on March 12	10 686	Total capital expenditures (new and used)	\$1,000.. 20 468
Production workers on May 12	10 439	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 1 976
Production workers on August 12	10 474	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 18 492
Production workers on November 12	10 701	Total retirements ²	\$1,000.. 5 718
Production-worker hours	20 300	Gross book value of total assets at end of year	\$1,000.. 215 362
Production-worker wages	186 570	Total depreciation during year ²	\$1,000.. 15 125
Total cost of materials	\$1,000.. 469 811	Total rental payments ²	\$1,000.. 18 150
Cost of materials, parts, containers, etc., consumed	\$1,000.. 379 281	Buildings and other structures rental payments ²	\$1,000.. 8 500
Cost of resales	\$1,000.. 28 185	Machinery and equipment rental payments ²	\$1,000.. 9 650
Cost of fuels	\$1,000.. 3 198	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 2 442
Cost of purchased electricity	\$1,000.. 7 955	Response coverage ratio ⁴	percent.. 67
Cost of contract work	\$1,000.. 51 192	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 1 719
Quantity of electricity purchased for heat and power	1,000 kWh.. 75 917	Response coverage ratio ⁴	percent.. 67
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 3 549
Total value of shipments	\$1,000.. 1 264 830	Response coverage ratio ⁴	percent.. 67
Primary products value of shipments	\$1,000.. 1 132 140	Cost of purchased legal services ³	\$1,000.. 2 440
Secondary products value of shipments	\$1,000.. 66 040	Response coverage ratio ⁴	percent.. 67
Total miscellaneous receipts	\$1,000.. 66 650	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 299
Value of resales	\$1,000.. 58 538	Response coverage ratio ⁴	percent.. 67
Contract receipts	\$1,000.. 6 255	Cost of purchased advertising services ³	\$1,000.. 16 156
Other miscellaneous receipts	\$1,000.. 1 857	Response coverage ratio ⁴	percent.. 67
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³	\$1,000.. 1 361
Value of primary products shipments made in all industries	\$1,000.. 1 229 189	Response coverage ratio ⁴	percent.. 67
Value of primary products shipments made in this industry	\$1,000.. 1 132 140	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 729
Value of primary products shipments made in other industries	\$1,000.. 97 049	Response coverage ratio ⁴	percent.. 67
Coverage ratio	percent.. 92		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339914, COSTUME JEWELRY & NOVELTY MFG												
All establishments	2	923	141	14 541	325 480	10 575	20 300	186 570	791 854	469 811	1 264 830	20 468
Establishments with 1 to 4 employees	7	529	—	973	16 307	809	1 170	10 424	36 959	22 185	59 098	809
Establishments with 5 to 9 employees	4	145	—	926	18 767	671	1 128	11 054	42 576	27 320	69 906	969
Establishments with 10 to 19 employees	3	108	—	1 466	28 841	1 109	1 781	17 156	63 940	38 398	101 996	1 337
Establishments with 20 to 49 employees	3	86	86	2 598	53 141	1 883	3 763	30 532	112 780	73 064	185 305	1 835
Establishments with 50 to 99 employees	3	31	31	2 048	46 548	1 443	2 741	26 205	102 102	65 677	166 115	2 866
Establishments with 100 to 249 employees	2	17	17	2 472	57 589	1 891	3 609	33 008	135 262	63 822	196 481	2 575
Establishments with 250 to 499 employees	—	3	3	1 343	40 425	806	1 722	15 060	132 385	83 945	218 151	2 437
Establishments with 500 to 999 employees	2	4	4	2 715	63 862	1 963	4 386	43 131	165 850	95 400	267 778	7 640
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	526	—	1 331	21 711	1 057	1 547	13 658	43 725	25 751	69 490	943

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339914	Costume jewelry & novelty mfg	923	14 541	325 480	10 575	20 300	186 570	791 854	469 811	1 264 830	20 468

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339914	Costume jewelry and novelties	N	X	X	1 229 189	N	X	X	N
3399140	Costume jewelry and costume novelties (except precious metal)	N	X	X	1 229 189	N	X	X	N
33991401	Women's and children's costume jewelry and costume novelties (including watch attachments) made of base metal, whether or not electroplated with gold, silver, chromium, etc. except rings	N	X	X	740 964	N	X	X	N
3399140111	Women's and children's costume jewelry and costume novelties (including watch attachments) made of base metal, whether or not electroplated with gold, silver, chromium, etc. except rings	152	X	X	725 515	N	X	X	N
3399140118	Metal trophies, except precious metal	15	X	X	15 449	N	X	X	N
33991402	Other costume jewelry, and costume novelties made of plastics, wood, leather	N	X	X	306 271	N	X	X	N
3399140201	Costume jewelry rings and ring mountings made of base metal, whether or not electroplated with gold, silver, chromium, etc.	27	X	X	50 757	30	X	X	97 175
3399140206	Men's costume jewelry (including watch attachments) made of base metal, whether or not electroplated with gold, silver, chromium, etc. except rings	15	X	X	18 422	N	X	X	N
3399140216	Fraternal, college, and school costume jewelry and emblems (including military insignia, excluding rings) made of base metal, whether or not electroplated with gold, silver, chromium, etc.	23	X	X	51 103	32	X	X	N
3399140221	Other costume jewelry worn or carried about the person (except compacts, vanity cases, cigar and cigarette cases, and lighters) made of base metal, whether or not electroplated with gold, silver, etc.	18	X	X	25 211	36	X	X	56 053
3399140226	Other costume jewelry, compacts, nonleather vanity cases, imitation pearls, and costume novelties made of plastics, wood, leather	76	X	X	160 778	N	X	X	N
3399140Y	Costume jewelry, nsk	N	X	X	181 954	N	X	X	N
3399140YWW	Costume jewelry, nsk, for nonadministrative-record establishments	N	X	X	115 857	N	X	X	N
3399140YWY	Costume jewelry, nsk, for administrative-record establishments	N	X	X	66 097	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339914	COSTUME JEWELRY & NOVELTY MFG				
33200005	Fabricated metal products, including forgings	X	29 632	X	N
33100035	Castings (rough and semifinished)	X	D	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
33120017	Steel sheet and strip, including tin plate	X	D	X	N
33120021	Steel pipes (except castings, forgings, and fabricated metal products)	X	D	X	N
33142135	Copper and copper-base alloy pipe and tube (except castings, forgings, and fabricated metal products)	X	D	X	N
33142141	All other copper and copper-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
33100083	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
33141901	Precious metals (gold, platinum, etc.), all forms, including ingot, sheet, strip, solder, plating, electrodes, etc.	X	22 447	X	N
33100027	Other shapes and forms, including castings	X	6 473	X	N
33991303	Precious, semiprecious, and synthetic stones, and pearls; cut, polished, or drilled	X	56 419	X	N
33991301	Jewelers' findings, including joints, pins, clasps, chains, flat stock, etc.	X	43 597	X	N
33990000	Other jewelry, silverware, and plated ware	X	39 097	X	N
00970099	All other materials and components, parts, containers, and supplies	X	66 140	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	111 832	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339914 COSTUME JEWELRY AND NOVELTY MANUFACTURING

This U.S. industry comprises establishments primarily engaged in (1) manufacturing, engraving, chasing, and etching costume jewelry; and/or (2) manufacturing, engraving, chasing, or etching nonprecious metal personal goods (i.e., small articles carried on or about the person, such as compacts or cigarette cases). This industry includes establishments primarily engaged in manufacturing precious plated jewelry and precious plated personal goods.

The data published with NAICS code 339914 include the following SIC industries:

3479 Metal coating and allied services (pt)
3499 Fabricated metal products, n.e.c. (pt)
3961 Costume jewelry

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339914 include establishments primarily engaged in manufacturing upholstered metal household furniture or metal box spring frames. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt				3399121101	3914111	3914111
3391121661	3841196	3841196				3399121106	3914131	3914131
3391121766	3841199	3841199				3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100				3399121121	3914153	3914153
			339114W pt.	38430	38430	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWW pt.	3699000 pt.	3699000 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWW pt.	3843000	3843000			
3391123111	3841293	3841293	339114WYWW pt.	3699002 pt.	3699002 pt			
3391123116	3841296	3841296	339114WYWW pt.	3843002	3843002			
3391123YWV	3841200	3841200						
339112W pt.	38290 pt.	38290 pt.	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
			3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
339112W pt.	38410	38410	3391151106	3851117	3851117	3399123106	3914211	3914211
339112WYWW pt.	3829000 pt.	3829000 pt	3391151111	3851118	3851118	3399123111	3914235	3914235
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3391131	38421 pt.	38421 pt	3391153	38514	38514	3399123YWV pt.	3479000 pt.	3479000 pt
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339113104	3842102	3842102	3391153106	3851445	3851445			
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3391131211	3842105	3842105						
3391131214	3842106	3842106	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
3391131217	3842107	3842107	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131217	3842108	3842108	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131224	3842109	3842109	3391155YWV	3851500	3851500	339912WYWW pt.	3479002 pt.	3479002 pt
3391131227	3842110	3842110				339912WYWW pt.	3914002 pt.	3914002 pt
3391131231	3842112	3842112	3391157	38516	38516			
			3391157101	3851612	3851612	3399131	39152	39152
			3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
			3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
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3391131234	3842113	3842113	339115B	38517	38517			
3391131337	3842122	3842122	339115B101	3851702	3851702	3399133	39153	39153
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt			
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3391131571	3842165	3842165				3399135100	3915400	3915400
3391131574	3842183	3842183	339115W	38510	38510	339913W	39150	39150
3391131577	3842185	3842185	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131581	3842187	3842187	339115WYWW	3851002	3851002	339913WYWW	3915002	3915002
3391131584	3842189	3842189						
3391131587	3842191	3842191	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131591	3842197	3842197	3391160100 pt.	8072001	8072000 pt			
3391131594	3842198	3842198	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131YWV	3842100 pt.	3842100 pt	3391160YWW	8072000 pt.	8072000 pt			
			3391160YWY	8072002	8072000 pt			
3391135	38423	38423	3399111	39111	39111	3399140 pt.	34998 pt.	34998 pt
3391135101	3842311	3842311	3399111101	3911111	3911111			
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140111 pt.	39610	39610
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140111 pt.	3961032 pt.	3961031
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140118	3499895	3499899 pt
3391135121	3842361	3842361	3399111526	3911115	3911115	3399140201	3961011	3961011
3391135126	3842373	3842373	3399111531	3911198	3911198	3399140206 pt.	3961022 pt.	3961021
3391135YWV	3842300	3842300	3399111YWV	3911100	3911100	3399140206 pt.	3961022 pt.	3961041 pt
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3391137	25991	25991				3399140221	3961072	3961072
3391137100	2599100	2599100				3399140226 pt.	3479026	3479021 pt
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			3399113101	3911311	3911311	3399140226 pt.	3961098 pt.	3961099
			3399113106 pt.	3911315 pt.	3911321	3399140YWW pt.	3479000 pt.	3479000 pt
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3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
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3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
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3399203206	3949241	3949241	3399325116	3944519	3944519	33995030106 pt	3993203 pt	3993222
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3399203421	3949298	3949298	3399325231	3944525	3944525	33995030106 pt	3993203 pt	3993276 pt
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3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
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3399207101	3949401	3949401	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993272 pt
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3399207131 pt	3949431 pt	3949403 pt	3399327YVW	3944600	3944600	3399503121 pt	3993209 pt	3993278 pt
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3399209	39495	39495	339932WYVW	3944000 pt	3944000 pt	3399505106	3993351	3993300 pt
3399209101	3949511	3949511	339932WYVW	3944002 pt	3944002 pt	3399505YVW	3993300	3993300 pt
3399209106	3949515	3949515	3399411	39511	39511	339950W	39930	39930
3399209111	3949527	3949527	3399411101	3951102	3951102	339950WYVW	3993000	3993000
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993002	3993002
339920911A	3949569	3949569	3399411311	3951113	3951113	3399911	30534	30534
339920911F	3949575	3949575	3399411YVW	3951100	3951100	3399911111	3053415	3053415
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3399209126	3949536	3949536	3399415101	3951305	3951305	3399913221	3053524	3053531 pt
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3399209161	3949591	3949591	3399421YVW pt	2531100 pt	2531100 pt	3399915261	3053635	3053635
3399209166	3949585	3949585	3399421YVW pt	3952300	3952300	3399915YVW	3053600	3053600
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3399209176	3949572	3949553 pt	3399423101	3952414	3952413 pt	3399917111	3053729	3053729
3399209181	3949576	3949553 pt	3399423206	3952421	3952419 pt	3399917121	3053748	3053748
3399209186	3949556	3949556	3399423YVW	3952400 pt	3952400 pt	3399917YVW	3053700	3053700
3399209191	3949571	3949571 pt	3399425	35799 pt	35799 pt	3399918	30538	30538
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3399209196	3949570	3949570 pt	3399425000 pt	3579930	3579930	3399918121	3053813	3053813
3399209YVW	3949500	3949500	339942W pt	25310 pt	25310 pt	3399918131	3053815	3053815
339920W	39490	39490	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
339920WYVW	3949000	3949000	339942W pt	39520 pt	39520 pt	3399918251	3053817	3053817
339920WYVW	3949002	3949002	339942W pt	395200 pt	395200 pt	3399918YVW	3053800	3053800
3399310	39420	39420	339942W pt	2531000 pt	2531000 pt	3399919	30539	30539
3399310106	3942012	3942012	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310111	3942021	3942021	339942WYVW pt	3952000 pt	3952000 pt	3399919121	3053973	3053973
3399310131	3942056	3942056	339942WYVW pt	2531002 pt	2531002 pt	3399919131	3053975	3053975
3399310216	3942043	3942043	339942WYVW pt	3579002 pt	3579002 pt	3399919141	3053977	3053977
3399310301	3942008	3942008	339942WYVW pt	3952002 pt	3952002 pt	3399919151 pt	3053989 pt	3053979
3399310321	3942053	3942053	339942WYVW pt	3953013	3953013	3399919151 pt	3053989 pt	3053981
3399310326	3942054	3942054	3399430101	3953015	3953015	3399919YVW	3053900	3053900
3399310YVW	3942000	3942000	3399430106	3953033	3953033	339991W	30530	30530
3399310YVW	3942002	3942002	3399430211	3953035	3953035	339991WYVW	3053000	3053000
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3399321101	3944316	3944316	3399430321	3953098	3953098	3399921	39311	39311
3399321106	3944326	3944346 pt	3399430YVW	3953000	3953000	3399921101 pt	3931141 pt	3931111
3399321111	3944381	3944381	3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931115
3399321116	3944397	3944397	3399441	39551	39551	3399921106	3931151	3931151
3399321YVW	3944300 pt	3944300 pt	3399441101	3955115	3955115	3399921YVW	3931100	3931100
3399323	39444	39444	3399441201	3955110	3955110	3399923	39312	39312
3399323111	3944415	3944415	3399441211	3955120	3955120	3399923101	3931211	3931211
3399323116	3944421	3944421	3399441YVW	3955100	3955100	3399923106	3931251	3931251
3399323121	3944423	3944423	3399443	39552	39552	3399923YVW	3931200	3931200
3399323126	3944424	3944424	3399443100	3955200	3955200	3399925	39313	39313
3399323131	3944428	3944428	339944W	39550	39550	3399925101	3931311	3931311
3399323201	3944411	3944411	339944WYVW	3955000	3955000	3399925106	3931351	3931351
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3399323236	3944429	3944429						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
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3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
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			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
3399931 pt.....	31310 pt.....	31310 pt.....	3399943211 pt.....	3991253 pt.....	3991285.....	3399993YVW.....	3999200.....	3999200.....
			3399943YVW.....	3991200.....	3991200.....			
3399931 pt.....	39651.....	39651.....				3399995.....	39994.....	39994.....
3399931101 pt.....	3965131 pt.....	3965101.....	3399945.....	39913.....	39913.....	3399995100.....	3999400.....	3999400.....
3399931101 pt.....	3965131 pt.....	3965109.....	3399945101.....	3991321.....	3991321.....			
3399931106 pt.....	3965133 pt.....	3965111.....	3399945106 pt.....	3991328 pt.....	3991327.....	3399997.....	39997.....	39997.....
3399931106 pt.....	3965133 pt.....	3965119.....	3399945106 pt.....	3991328 pt.....	3991329.....	3399997100.....	3999700.....	3999700.....
3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
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3399931111 pt.....	3965135 pt.....	3965129.....	3399945221.....	3991343.....	3991343.....	3399999101.....	3999813.....	3999813.....
3399931YVW pt.....	3131000 pt.....	3131000 pt.....	3399945226.....	3991398.....	3991398.....	3399999106 pt.....	3999816 pt.....	3999816.....
3399931YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
						3399999YVW.....	3999800.....	3999800.....
3399933.....	39654.....	39654.....						
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3399933106 pt.....	3965443 pt.....	3965431.....	339994W pt.....	39910.....	39910.....	339999C206.....	2499161.....	2499161.....
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3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
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3399935126 pt.....	3965691 pt.....	3965689.....	3399953101.....	3995211.....	3995211.....	339999H151 pt.....	3999997 pt.....	3999944 pt.....
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			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
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			3399955.....	39953.....	39953.....			
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339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
339993WYWY pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYWWW pt.....	3999000 pt.....	3999000 pt.....
339993WYWY pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYWY pt.....	2499002 pt.....	2499002 pt.....
			3399955100 pt.....	3995300 pt.....	3995393.....	339999WYWY pt.....	3999002 pt.....	3999002 pt.....
3399941 pt.....	23924 pt.....	23924 pt.....						

Sporting and Athletic Goods Manufacturing

1997

Issued August 1999

EC97M-3399E

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Sporting and Athletic Goods Manufacturing

1997

Issued August 1999

EC97M-3399E

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Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339920 394900	Sporting & athletic goods mfg . Sporting & athletic goods, n.e.c.	2 480 N	2 565 2 565	68 920 68 920	1 799 871 1 799 871	50 116 50 116	96 778 96 778	1 004 876 1 004 876	5 773 673 5 773 673	4 679 110 4 679 110	10 458 222 10 458 222	345 602 345 602

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
339920, SPORTING & ATHLETIC GOODS MFG												
United States	1	2 565	570	68 920	1 799 871	50 116	96 778	1 004 876	5 773 673	4 679 110	10 458 222	345 602
Alabama	8	44	13	1 712	36 353	1 440	2 578	26 016	84 586	102 045	177 945	4 963
Arizona	-	37	13	2 035	57 703	1 476	2 684	29 693	141 590	98 582	242 087	7 893
Arkansas	3	38	12	1 385	29 446	1 005	1 790	15 668	81 646	69 978	161 498	3 445
California	1	470	107	13 872	408 627	9 795	20 380	192 533	1 389 555	981 183	2 341 681	85 408
Colorado	3	77	11	1 340	36 841	1 023	1 936	20 918	103 530	53 974	152 304	4 739
Connecticut	4	30	8	868	21 279	657	1 197	12 449	51 656	32 822	84 757	2 851
Florida	4	175	24	2 034	42 357	1 517	2 490	24 484	107 939	92 032	197 336	5 809
Georgia	4	54	9	850	28 362	559	1 091	12 457	85 970	57 081	147 158	8 453
Hawaii *	6	15	1	100	2 384	76	138	1 696	4 060	4 688	8 761	511
Idaho	6	23	1	127	2 241	96	128	1 330	5 956	4 178	10 177	265
Illinois	3	90	24	3 450	99 766	2 292	3 752	37 998	289 372	230 712	557 556	13 892
Indiana	-	40	12	1 339	31 457	955	1 992	19 438	85 612	94 483	187 072	2 569
Iowa	-	23	6	561	13 773	352	699	6 094	37 930	24 063	63 306	1 343
Kentucky	-	27	6	459	13 040	388	730	7 728	35 427	24 595	60 251	1 365
Louisiana	2	25	7	628	12 735	487	813	7 945	31 045	16 689	47 769	1 347
Maryland	1	20	4	279	6 319	192	318	3 237	17 150	14 928	31 698	719
Massachusetts	-	38	8	2 493	109 520	1 855	4 160	72 499	509 145	236 389	761 974	41 726
Michigan	-	95	12	1 317	41 067	933	1 775	24 397	161 995	190 807	351 214	9 755
Minnesota	1	69	16	2 174	58 772	1 630	3 411	36 968	204 409	305 482	518 031	12 643
Mississippi	1	29	8	1 286	31 953	1 067	2 080	24 544	94 775	48 742	143 356	3 574
Missouri	3	74	22	2 398	58 997	1 813	3 645	33 313	194 605	109 773	301 965	10 186
Montana	6	24	6	386	7 177	310	538	4 611	17 801	15 847	33 032	863
Nebraska	2	12	4	228	4 555	174	304	2 719	10 891	8 810	20 017	336
Nevada	8	14	2	222	4 486	187	300	3 254	11 446	7 990	19 250	492
New Hampshire	1	14	3	184	3 978	110	187	1 715	10 140	17 246	27 522	250
New Jersey	2	36	9	1 003	21 646	782	1 376	12 570	60 454	53 688	111 840	1 996
New York	4	80	19	1 618	38 253	1 330	2 611	26 083	140 898	113 088	245 156	12 312
North Carolina	3	56	12	750	14 938	557	900	8 492	38 176	34 762	72 354	2 071
Ohio	1	57	10	772	18 381	594	1 070	11 974	42 450	37 802	84 044	1 001
Oklahoma	2	35	9	1 501	26 092	873	1 530	14 566	155 354	121 841	277 599	7 112
Oregon	1	84	14	1 442	34 985	1 034	1 875	19 585	88 032	51 730	134 748	6 591
Pennsylvania	2	79	24	2 558	64 970	1 948	3 372	42 853	171 718	197 197	373 177	11 293
South Carolina	-	25	4	1 046	26 127	860	1 687	17 920	115 473	83 879	192 881	4 306
Tennessee	3	40	11	1 688	40 248	1 214	2 416	25 141	122 922	118 820	236 647	7 544
Texas	1	151	32	2 875	59 638	2 252	4 027	38 567	206 325	166 764	373 621	9 348
Utah	-	47	15	4 045	84 958	2 676	6 247	52 246	223 716	241 483	464 078	18 291
Vermont	-	12	5	567	17 401	315	616	6 474	91 169	111 723	196 746	4 322
Virginia	-	25	5	888	28 403	494	1 070	10 680	48 602	76 814	138 426	3 275
Washington	1	102	26	3 361	86 719	2 447	4 710	50 200	271 926	214 512	476 835	19 634
Wisconsin	-	97	29	2 465	61 094	1 854	3 323	36 109	203 309	184 748	381 091	10 004

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339920, SPORTING & ATHLETIC GOODS MFG		339920, SPORTING & ATHLETIC GOODS MFG— Con.	
Companies ¹	number.. 2 480	Value added .....	..\$1,000.. 5 773 673
All establishments	number.. 2 565	Total inventories, beginning of year .....	..\$1,000.. 1 860 441
Establishments with 1 to 19 employees	number.. 1 995	Finished goods inventories, beginning of year .....	..\$1,000.. 933 639
Establishments with 20 to 99 employees	number.. 421	Work-in-process inventories, beginning of year .....	..\$1,000.. 259 335
Establishments with 100 employees or more	number.. 149	Materials and supplies inventories, beginning of year .....	..\$1,000.. 667 467
All employees	number.. 68 920	Total inventories, end of year .....	..\$1,000.. 1 858 218
Total compensation ² .....	..\$1,000.. 2 198 909	Finished goods inventories, end of year .....	..\$1,000.. 910 820
Annual payroll .....	..\$1,000.. 1 799 871	Work-in-process inventories, end of year .....	..\$1,000.. 276 715
Total fringe benefits .....	..\$1,000.. 399 038	Materials and supplies inventories, end of year .....	..\$1,000.. 670 683
Production workers, average for year	number.. 50 116	Gross book value of total assets at beginning of year .....	..\$1,000.. 2 220 367
Production workers on March 15	number.. 50 513	Total capital expenditures (new and used) .....	..\$1,000.. 345 602
Production workers on May 15	number.. 51 074	Capital expenditures for buildings and other structures (new and used) .....	..\$1,000.. 57 247
Production workers on August 15	number.. 49 045	Capital expenditures for machinery and equipment (new and used) .....	..\$1,000.. 288 355
Production workers on November 15	number.. 49 832	Total retirements ² .....	..\$1,000.. 83 727
Production-worker hours .....	..1,000.. 96 778	Gross book value of total assets at end of year .....	..\$1,000.. 2 482 242
Production-worker wages .....	..\$1,000.. 1 004 876	Total depreciation during year ² .....	..\$1,000.. 194 830
Total cost of materials .....	..\$1,000.. 4 679 110	Total rental payments ² .....	..\$1,000.. 130 354
Cost of materials, parts, containers, etc., consumed .....	..\$1,000.. 3 755 350	Buildings and other structures rental payments ² .....	..\$1,000.. 77 032
Cost of resales .....	..\$1,000.. 708 647	Machinery and equipment rental payments ² .....	..\$1,000.. 53 322
Cost of fuels .....	..\$1,000.. 28 842	Cost of purchased services for the repair of buildings and other structures ³ .....	..\$1,000.. 128 255
Cost of purchased electricity .....	..\$1,000.. 62 869	Response coverage ratio ⁴	percent.. 64
Cost of contract work .....	..\$1,000.. 123 402	Cost of purchased services for the repair of machinery and equipment ³ .....	..\$1,000.. 97 302
Quantity of electricity purchased for heat and power .....	..1,000 kWh.. 1 038 628	Response coverage ratio ⁴	percent.. 64
Quantity of electricity generated less sold for heat and power .....	..1,000 kWh.. —	Cost of purchased communications services ³ .....	..\$1,000.. 104 552
Total value of shipments .....	..\$1,000.. 10 458 222	Response coverage ratio ⁴	percent.. 64
Primary products value of shipments .....	..\$1,000.. 9 124 373	Cost of purchased legal services ³ .....	..\$1,000.. 32 704
Secondary products value of shipments .....	..\$1,000.. 174 345	Response coverage ratio ⁴	percent.. 64
Total miscellaneous receipts .....	..\$1,000.. 1 159 504	Cost of purchased accounting and bookkeeping services ³ .....	..\$1,000.. 53 636
Value of resales .....	..\$1,000.. 1 115 484	Response coverage ratio ⁴	percent.. 64
Contract receipts .....	..\$1,000.. 11 695	Cost of purchased advertising services ³ .....	..\$1,000.. 195 206
Other miscellaneous receipts .....	..\$1,000.. 32 325	Response coverage ratio ⁴	percent.. 64
Primary products specialization ratio	percent.. 98	Cost of purchased software and other data processing services ³ .....	..\$1,000.. 25 426
Value of primary products shipments made in all industries .....	..\$1,000.. 9 510 408	Response coverage ratio ⁴	percent.. 64
Value of primary products shipments made in this industry .....	..\$1,000.. 9 124 373	Cost of purchased refuse removal (including hazardous waste) services ³ .....	..\$1,000.. 28 410
Value of primary products shipments made in other industries .....	..\$1,000.. 386 035	Response coverage ratio ⁴	percent.. 64
Coverage ratio	percent.. 95		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339920. SPORTING & ATHLETIC GOODS MFG												
All establishments	1	2 565	570	68 920	1 799 871	50 116	96 778	1 004 876	5 773 673	4 679 110	10 458 222	345 602
Establishments with 1 to 4 employees	9	1 212	—	2 302	46 660	1 896	3 377	29 197	128 637	120 572	250 413	7 816
Establishments with 5 to 9 employees	7	446	—	2 994	63 154	2 204	3 404	37 109	168 940	140 013	308 848	9 452
Establishments with 10 to 19 employees	3	337	—	4 662	102 006	3 400	5 739	57 810	281 075	220 384	498 452	13 640
Establishments with 20 to 49 employees	2	278	278	8 686	198 978	6 474	11 190	113 679	514 303	437 107	946 662	25 800
Establishments with 50 to 99 employees	2	143	143	9 627	227 648	7 040	12 884	128 884	609 947	570 247	1 181 223	27 607
Establishments with 100 to 249 employees	1	95	95	14 510	365 246	10 847	20 811	200 550	1 026 711	1 008 426	2 034 969	71 334
Establishments with 250 to 499 employees	—	40	40	13 542	393 937	9 823	20 394	218 446	1 415 375	1 152 106	2 559 945	80 487
Establishments with 500 to 999 employees	1	11	11	7 691	229 423	5 356	10 462	124 254	855 149	626 156	1 485 180	57 680
Establishments with 1,000 to 2,499 employees	—	3	3	4 906	172 819	3 076	8 517	94 947	773 536	404 099	1 192 530	51 786
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	1 402	—	4 759	83 230	3 766	5 105	52 657	233 874	215 835	449 866	13 990

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339920	Sporting & athletic goods mfg	2 565	68 920	1 799 871	50 116	96 778	1 004 876	5 773 673	4 679 110	10 458 222	345 602
3399201	Fishing tackle and equipment	132	6 082	127 087	4 575	8 206	79 130	360 612	353 960	731 950	20 912
3399203	Golf equipment	119	15 406	512 694	10 996	24 147	274 451	2 029 923	1 225 205	3 241 137	141 276
3399205	Playground equipment	47	4 025	114 743	2 877	6 066	65 917	392 684	246 970	635 604	15 645
3399207	Gymnasium and exercise equipment	93	9 522	235 507	6 194	12 962	118 715	684 445	702 908	1 361 635	34 229
3399209	Other sporting and athletic goods	430	23 342	601 275	17 284	33 042	339 895	1 760 859	1 650 714	3 443 821	100 517

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339920	Sporting and athletic goods	N	X	X	9 510 408	N	X	X	6 993 925
3399201	Fishing tackle and equipment	N	X	X	682 467	N	X	X	493 073
33992011	Fishing tackle and equipment	N	X	X	659 419	N	X	X	N
3399201101	Fishing rods, all types	18	X	X	73 799	19	X	X	43 071
3399201106	Fishing reels, all types	15	X	X	120 441	9	X	X	D
3399201111	Fishing rod and reel combinations	6	X	X	D	5	X	X	D
3399201116	Fish hooks (including snelled hooks)	5	X	X	D	7	X	X	30 979
3399201121	Fishing casting plugs, spinners, spoons, flies, lures, and similar artificial baits	60	X	X	166 491	64	X	X	136 902
3399201126	Fishing tackle boxes	5	X	X	D	8	X	X	45 140
3399201131	Other fishing equipment, including creels, fish and bait buckets, floats, furnished lines, sinkers, snap swivels, etc	53	X	X	97 021	63	X	X	69 642
3399201Y	Fishing tackle and equipment, nsk	N	X	X	23 048	N	X	X	N
3399201YVV	Fishing tackle and equipment, nsk	N	X	X	23 048	N	X	X	13 389
3399203	Golf equipment	N	X	X	2 940 674	N	X	X	1 781 982
33992031	Golf balls	N	X	X	801 027	N	X	X	N
3399203101	Golf balls	11	X	X	801 027	12	X	X	501 788
33992032	Golf clubs, irons	N	X	X	923 753	N	X	X	N
3399203206	Golf clubs, irons	41	X	X	923 753	47	X	X	507 032
33992033	Golf clubs, woods	N	X	X	617 183	N	X	X	N
3399203311	Golf clubs, woods	30	X	X	617 183	48	X	X	337 006
33992034	Other golf equipment including bags, carts for carrying golf bags, excluding shoes and apparel	N	X	X	582 519	N	X	X	N
3399203416	Golf bags	23	X	X	159 529	25	X	X	157 562
3399203421	Other golf equipment (carts for carrying golf bags, shafts sold as such, tees, etc), excluding shoes and apparel	56	X	X	422 990	54	X	X	266 920
3399203Y	Golf equipment, nsk	N	X	X	16 192	N	X	X	N
3399203YVV	Golf equipment, nsk	N	X	X	16 192	N	X	X	11 674
3399205	Playground equipment	N	X	X	720 468	N	X	X	384 556
33992051	Playground equipment	N	X	X	720 339	N	X	X	N
3399205101	Home playground equipment, including swing sets, slides, seesaws, sandboxes, etc	27	X	X	344 779	29	X	X	226 402
3399205106	Institutional and commercial playground equipment, heavy-duty (including swings, slides, etc)	38	X	X	375 560	48	X	X	158 056
3399205Y	Playground equipment, nsk	N	X	X	129	N	X	X	N
3399205YVV	Playground equipment, nsk	N	X	X	129	N	X	X	98
3399207	Gymnasium and exercise equipment	N	X	X	1 235 906	N	X	X	1 375 906
33992071	Gymnasium and exercise equipment	N	X	X	1 226 761	N	X	X	N
3399207101	Gymnasium and gymnastic apparatus and equipment (parallel and horizontal bars, balance beams, trampolines, mats, etc)	33	X	X	96 116	36	X	X	85 807
3399207111	Free weight lifting equipment (including belts, benches, and weights)	26	X	X	138 359	N	X	X	N
3399207121	Cross-country ski exercisers	1	X	X	D	N	X	X	N
3399207131	Training units (multi-and single-station) and home gyms	18	X	X	94 619	N	X	X	N
3399207141	Treadmills	13	X	X	286 498	N	X	X	N
3399207151	Gliders and riders	1	X	X	D	N	X	X	N
3399207199	Other health, physical fitness, and exercising equipment (rowing machines, slant-boards, ab exercisers, etc.)	51	X	X	564 810	N	X	X	N
3399207Y	Gymnasium and exercise equipment, nsk	N	X	X	9 145	N	X	X	N
3399207YVV	Gymnasium and exercise equipment, nsk	N	X	X	9 145	N	X	X	14 017
3399209	Other sporting and athletic goods	N	X	X	3 027 555	N	X	X	2 365 277
33992091	Other sporting and athletic goods	N	X	X	2 958 551	N	X	X	N
3399209101	Billiard and pool tables	25	X	X	114 739	21	X	X	100 623
3399209106	Billiard and pool supplies (such as balls, cues, etc.) sold separately	21	X	X	33 558	17	X	X	26 402
3399209111	Bowling alleys and bowling pinsetters	8	X	X	123 301	8	X	X	135 341
3399209116	Bowling balls	5	X	X	118 048	5	X	X	77 105
339920911A	Surfboards and sailboards	21	X	X	44 216	18	X	X	21 805
339920911F	Water skis	8	X	X	41 265	5	X	X	35 648
339920911K	Underwater sports equipment (SCUBA) and skindiving equipment, excluding watches and cameras	20	X	X	99 153	16	X	X	113 147
339920911P	Bicycle helmets	3	X	X	D	N	X	X	N
339920911U	Football helmets	4	X	X	D	4	X	X	D
339920911Y	Other sports helmets, excluding football, motorcycle, auto racing, and bicycle	8	X	X	69 198	N	X	X	N

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339920	Sporting and athletic goods—Con.								
3399209	Other sporting and athletic goods—Con.								
33992091	Other sporting and athletic goods—Con.								
3399209121	Other bowling alley playing supplies (including pins, etc.)	10	X	X	97 728	11	X	X	144 787
3399209126	Baseballs and softballs	5	X	X	4 544	4	X	X	48 247
339920912A	Body protective equipment for all sports (masks; shoulder, chest, knee, and kidney pads; etc), excluding helmets	22	X	X	60 417	27	X	X	73 399
339920912F	Football, baseball, and soccer equipment, nec (including track, field, and miscellaneous athletic field equipment)	29	X	X	69 075	30	X	X	41 236
339920912K	Wading pools and other above-ground swimming pools less than 15 ft in diameter, not filtered	2	X	X	D	3	X	X	D
339920912P	Above-ground swimming pools 15 ft in diameter or more, filtered (completely manufactured)	11	X	X	83 964	11	X	X	115 873
339920912U	Other sporting and athletic goods	195	X	X	1 027 142	N	X	X	N
3399209131	Baseball mitts and gloves, including softball	1	X	X	D	3	X	X	D
3399209136	Wood baseball bats, including softball bats	4	X	X	3 762	3	X	X	13 768
3399209141	Metal baseball bats, including softball bats	5	X	X	90 028	5	X	X	80 305
3399209146	Footballs	3	X	X	D	4	X	X	34 666
3399209151	All inflatable athletic balls other than footballs (including basketballs, soccer balls, volleyballs, etc.)	1	X	X	D	5	X	X	6 266
3399209156	Tennis equipment, excluding clothing, shoes, and nets	10	X	X	79 448	N	X	X	N
3399209161	Racquetball rackets and racquetballs	2	X	X	D	5	X	X	8 675
3399209166	Archery equipment	57	X	X	229 829	61	X	X	205 380
3399209171	Ice and ice hockey skates	4	X	X	D	N	X	X	N
3399209176	Traditional roller skates (quads)	2	X	X	D	N	X	X	N
3399209181	Inline skates	4	X	X	D	N	X	X	N
3399209186	Wooden and plastics skateboards (including complete sets)	14	X	X	55 348	8	X	X	11 993
3399209191	Winter sports equipment (bobsleds, toboggans, hockey goods, etc.), excluding clothing, protective equipment, and skates	15	X	X	69 719	N	X	X	N
3399209193	Snowboards	18	X	X	89 029	N	X	X	N
3399209196	Snow skis and other snow-ski equipment (excluding clothing, body protective equipment, and boots)	14	X	X	80 861	13	X	X	18 530
3399209Y	Other sporting and athletic goods, nsk	N	X	X	69 004	N	X	X	N
3399209YVV	Other sporting and athletic goods, nsk	N	X	X	69 004	N	X	X	54 581
339920W	Sporting and athletic goods, nec, nsk	N	X	X	903 338	N	X	X	593 131
339920WY	Sporting and athletic goods, nec, nsk	N	X	X	903 338	N	X	X	N
339920WYWWW	Sporting and athletic goods, nec, nsk, for nonadministrative-record establishments	N	X	X	490 266	N	X	X	413 424
339920WYWY	Sporting and athletic goods, nec, nsk, for administrative-record establishments	N	X	X	413 072	N	X	X	179 707

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399201	FISHING TACKLE AND EQUIPMENT		
	United States	682 467	493 073
	Alabama	18 332	9 934
	Arizona	5 123	N
	California	11 949	12 587
	Florida	24 513	16 678
	Michigan	20 096	13 220
	Minnesota	28 280	32 161
	Mississippi	2 768	2 146
	Missouri	8 705	8 570
	Nebraska	6 384	3 346
	Oregon	14 350	N
	Texas	20 675	11 273
	Washington	55 867	29 520
	Wisconsin	36 146	24 787
3399203	GOLF EQUIPMENT		
	United States	2 940 674	1 781 982
	California	1 395 266	397 894
	Colorado	7 192	N
	Florida	31 511	12 639
	Georgia	80 465	N
	Illinois	127 022	127 607
	Ohio	10 558	N
	Oregon	8 112	N
	Texas	47 642	N
3399205	PLAYGROUND EQUIPMENT		
	United States	720 468	384 556
	Florida	7 311	8 838
	Pennsylvania	134 913	58 272
	Texas	22 092	12 179
3399207	GYMNASIUM AND EXERCISE EQUIPMENT		
	United States	1 235 906	1 375 906
	California	178 220	114 242
	Colorado	3 929	N
	Georgia	2 806	N
	Illinois	48 114	N
	Indiana	2 661	12 053
	Iowa	11 244	N
	Michigan	2 976	N
	Minnesota	192 945	N
	Missouri	52 917	39 854
	Pennsylvania	21 537	19 386
	Texas	59 265	84 857
	Washington	128 476	65 589
	Wisconsin	5 856	11 806
3399209	OTHER SPORTING AND ATHLETIC GOODS		
	United States	3 027 555	2 365 277
	Alabama	13 517	17 435
	Arizona	97 290	N
	California	430 861	480 386
	Colorado	52 674	28 064
	Connecticut	39 784	8 872
	Florida	59 370	51 929
	Georgia	14 799	14 630
	Illinois	266 156	174 220
	Indiana	146 273	75 638
	Iowa	35 827	11 422
	Kentucky	44 472	49 684
	Louisiana	12 373	6 541
	Maryland	19 787	N
	Massachusetts	2 606	N
	Michigan	124 231	177 218
	Minnesota	99 218	35 150
	Mississippi	15 201	9 556
	Missouri	58 760	58 184
	Montana	12 375	N
	Nebraska	2 403	6 804
	New Hampshire	3 300	N
	New Jersey	31 642	N
	New York	110 708	70 429
	North Carolina	23 621	23 237
	Ohio	55 555	87 529
	Oklahoma	8 384	11 840
	Oregon	64 681	35 522
	Pennsylvania	77 039	60 851
	Tennessee	42 948	55 310
	Texas	178 396	77 724
	Utah	223 565	63 810
	Vermont	36 677	10 494
	Virginia	102 971	N
	Washington	251 774	125 305
	Wisconsin	175 626	93 971

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. **Materials Consumed by Kind: 1997 and 1992**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339920	SPORTING & ATHLETIC GOODS MFG				
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products	X	78 914	X	59 208
33200095	Other fabricated metal products (except forgings)	X	160 772	X	149 813
33152005	Aluminum and aluminum-base alloy castings (rough and semifinished)	X	82 842	X	26 338
33152015	Other castings (rough and semifinished)	X	154 799	X	64 317
33210001	Forgings	X	3 608	X	2 251
33120017	Steel sheet and strip, including tin plate	X	96 470	X	54 668
33120027	All other steel shapes and forms (except castings, forgings, and fabricated metal products)	X	148 334	X	120 302
33131501	Aluminum and aluminum-base alloy sheet, plate, foil, and welded tubing	X	22 833	X	52 123
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	58 577	X	14 739
33100077	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	20 234	X	25 920
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	52 525	X	33 409
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	176 607	X	174 907
32500051	All other chemicals and allied products	X	55 567	X	15 496
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	147 859	X	102 217
31320007	Cotton, wool, manmade fiber fabrics, etc.	X	106 397	X	76 459
31611001	Finished leather	X	23 285	X	17 387
32100019	Rough and dressed lumber	X	94 689	X	62 671
00190004	Parts specially designed for sporting goods	X	570 913	X	495 599
32221001	Paperboard containers, boxes, and corrugated paperboard	X	163 913	X	81 040
00970099	All other materials and components, parts, containers, and supplies	X	869 456	X	606 757
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	666 756	X	597 644

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339920 SPORTING AND ATHLETIC GOODS MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing sporting and athletic goods (except apparel and footwear).

The data published with NAICS code 339920 include the following SIC industry:

3949 Sporting and athletic goods, n.e.c.

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339920 do not include establishments primarily engaged in the manufacture of wet suits. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	3391144W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	3391144W pt.	38430	38430	3399121101	3914111	3914111
3391121661	3841196	3841196	3391144YWW pt.	3699000 pt.	3699000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	3391144YWW pt.	3843000	3843000	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	3391144YWW pt.	3699002 pt.	3699002 pt	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	3391144YWW pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWW	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWW	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWW	3851400	3851400	3399123YWW pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWW	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWW	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWW	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
			3391160	80720	80720	339913W	39150	39150
3391131574	3842183	3842183	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072000 pt.	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160YWW	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWW	8072002	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160YWW	8072002	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWW	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131598	3842198	3842198	3399111	39111	39111	3399140 pt.	39610	39610
3391131YWW	3842100 pt.	3842100 pt	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
			3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135	38423	38423	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135101	3842311	3842311	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135106	3842321	3842321	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135111	3842322	3842322	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135116	3842351	3842351	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135121	3842361	3842361	3399111YWW	3911100	3911100	3399140221	3961072	3961072
3391135126	3842373	3842373				3399140226 pt.	3479026	3479021 pt
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			3399113101	3911311	3911311			
3391137	25991	25991	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
3391137100	2599100	2599100	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
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			3399113YWW	3911300	3911300	3399140YWW pt.	3961000	3961000
339113W pt.	38420 pt.	38420 pt				3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3499002 pt.	3499002 pt
339113WYWW pt.	3842000 pt.	3842000 pt						
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339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
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3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
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3399201YVW	3949100	3949100	3399325101	3944511	3944511	33995030101 pt	3993201 pt	3993212
3399203	39492	39492	3399325106	3944513	3944513	33995030101 pt	3993201 pt	3993262 pt
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3399203416	3949247	3949247	3399325226	3944523	3944523	33995030106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325231	3944525	3944525	33995030106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325236	3944530	3944530	33995030111 pt	3993205 pt	3993288 pt
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3399207121	3949421	3949406 pt	3399327221	3944695	3944695	3399503121 pt	3993209 pt	3993288 pt
3399207131 pt	3949431 pt	3949402 pt	3399327226	3944696	3944696	3399503126 pt	3993211 pt	3993262 pt
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3399209111	3949527	3949527	3399411101	3951102	3951102	339950WYVW	3993000	3993000
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993002	3993002
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339920911F	3949575	3949575	3399411YVW	3951100	3951100	3399911111	3053415	3053415
339920911K	3949577	3949577	3399413	39512	39512	3399911121 pt	3053419 pt	3053411
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339920911U	3949592	3949592	3399413206	3951206	3951206	3399911YVW	3053400	3053400
339920911Y	3949583	3949593 pt	3399413YVW	3951200	3951200	3399913	30535	30535
3399209121	3949530	3949530	3399415	39513	39513	3399913111	3053515	3053515
3399209126	3949536	3949536	3399415101	3951305	3951305	3399913221	3053524	3053531 pt
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339920912K	3949595	3949595	3399415116	3951325	3951325	3399913351 pt	3053529 pt	3053511
339920912P	3949597	3949597	3399415YVW	3951300	3951300	3399913351 pt	3053529 pt	3053513
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339920912U pt	3949599 pt	3949599	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053531
3399209131	3949537	3949537	339941WYVW	3951002	3951002	3399913YVW	3053500	3053500
3399209136	3949538	3949538	3399421 pt	25311 pt	25311 pt	3399915	30536	30536
3399209141	3949539	3949539	3399421 pt	39523	39523	3399915111	3053621	3053621
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3399209156 pt	3949561 pt	3949564	3399421111	3952322	3952322	3399915241	3053626	3053626
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3399209161	3949591	3949591	3399421YVW pt	2531100 pt	2531100 pt	3399915261	3053635	3053635
3399209166	3949585	3949585	3399421YVW pt	3952300	3952300	3399915YVW	3053600	3053600
3399209171	3949572	3949553 pt	3399423	39524 pt	39524 pt	3399917	30537	30537
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3399209186	3949556	3949556	3399423YVW	3952400 pt	3952400 pt	3399917YVW	3053700	3053700
3399209191	3949571	3949571 pt	3399425	35799 pt	35799 pt	3399918	30538	30538
3399209193	3949565	3949571 pt	3399425000 pt	3579900 pt	3579900 pt	3399918111	3053810	3053810
3399209196	3949570	3949570 pt	3399425000 pt	3579930	3579900 pt	3399918121	3053813	3053813
3399209YVW	3949500	3949500	339942W pt	25310 pt	25310 pt	3399918131	3053815	3053815
339920W	39490	39490	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
339920WYVW	3949000	3949000	339942W pt	39520 pt	39520 pt	3399918251	3053817	3053817
339920WYVW	3949002	3949002	339942W pt	395200 pt	395200 pt	3399918YVW	3053800	3053800
3399310	39420	39420	339942W pt	2531000 pt	2531000 pt	3399919	30539	30539
3399310106	3942012	3942012	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310111	3942021	3942021	339942WYVW pt	3952000 pt	3952000 pt	3399919121	3053973	3053973
3399310131	3942056	3942056	339942WYVW pt	2531002 pt	2531002 pt	3399919131	3053975	3053975
3399310216	3942043	3942043	339942WYVW pt	3579002 pt	3579002 pt	3399919141	3053977	3053977
3399310301	3942008	3942008	339942WYVW pt	3952002 pt	3952002 pt	3399919151 pt	3053989 pt	3053979
3399310321	3942053	3942053	339942WYVW pt	3953013	3953013	3399919151 pt	3053989 pt	3053981
3399310326	3942054	3942054	3399430101	3953015	3953015	3399919YVW	3053900	3053900
3399310YVW	3942000	3942000	3399430106	3953033	3953033	339991W	30530	30530
3399310YVW	3942002	3942002	3399430211	3953035	3953035	339991WYVW	3053000	3053000
3399321	39443 pt	39443 pt	3399430316	3953037	3953037	339991WYVW	3053002	3053002
3399321101	3944316	3944316	3399430321	3953098	3953098	3399921	39311	39311
3399321106	3944326	3944346 pt	3399430YVW	3953000	3953000	3399921101 pt	3931141 pt	3931111
3399321111	3944381	3944381	3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931115
3399321116	3944397	3944397	3399441	39551	39551	3399921106	3931151	3931151
3399321YVW	3944300 pt	3944300 pt	3399441101	3955115	3955115	3399921YVW	3931100	3931100
3399323	39444	39444	3399441201	3955110	3955110	3399923	39312	39312
3399323111	3944415	3944415	3399441211	3955120	3955120	3399923101	3931211	3931211
3399323116	3944421	3944421	3399441YVW	3955100	3955100	3399923106	3931251	3931251
3399323121	3944423	3944423	3399443	39552	39552	3399923YVW	3931200	3931200
3399323126	3944424	3944424	3399443100	3955200	3955200	3399925	39313	39313
3399323131	3944428	3944428	339944W	39550	39550	3399925101	3931311	3931311
3399323201	3944411	3944411	339944WYVW	3955000	3955000	3399925106	3931351	3931351
3399323206	3944413	3944413	339944WYVW	3955002	3955002	3399925YVW	3931300	3931300
3399323236	3944429	3944429						

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Doll and Stuffed Toy Manufacturing

1997

Issued August 1999

EC97M-3399F

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

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Doll and Stuffed Toy Manufacturing

1997

Issued August 1999

EC97M-3399F

1997 Economic Census

Manufacturing

Industry Series



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Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339931	Doll & stuffed toy mfg	240	240	3 392	63 722	2 524	4 606	41 609	193 676	104 698	299 802	3 939
394200	Dolls	N	240	3 392	63 722	2 524	4 606	41 609	193 676	104 698	299 802	3 939

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339931, DOLL & STUFFED TOY MFG												
United States	1	240	31	3 392	63 722	2 524	4 606	41 609	193 676	104 698	299 802	3 939
California	3	30	1	156	2 438	118	227	1 687	6 340	3 732	10 360	71
Illinois	-	10	2	245	4 427	200	475	2 855	32 653	13 424	45 634	126
Minnesota	-	8	1	183	3 002	105	194	1 879	6 828	3 599	10 430	236
New York	1	34	6	764	17 320	618	1 309	12 906	36 643	28 817	66 064	310
Pennsylvania	-	11	3	156	3 213	119	186	1 914	6 064	4 375	10 348	52

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339931, DOLL & STUFFED TOY MFG		339931, DOLL & STUFFED TOY MFG—Con.	
Companies ¹	number.. 240	Value added	\$1,000.. 193 676
All establishments	number.. 240	Total inventories, beginning of year	\$1,000.. 58 199
Establishments with 1 to 19 employees	number.. 209	Finished goods inventories, beginning of year	\$1,000.. 36 677
Establishments with 20 to 99 employees	number.. 24	Work-in-process inventories, beginning of year	\$1,000.. 7 490
Establishments with 100 employees or more	number.. 7	Materials and supplies inventories, beginning of year	\$1,000.. 14 032
All employees	number.. 3 392	Total inventories, end of year	\$1,000.. 62 599
Total compensation ²	\$1,000.. 72 493	Finished goods inventories, end of year	\$1,000.. 36 724
Annual payroll	\$1,000.. 63 722	Work-in-process inventories, end of year	\$1,000.. 6 015
Total fringe benefits	\$1,000.. 8 771	Materials and supplies inventories, end of year	\$1,000.. 19 860
Production workers, average for year	number.. 2 524	Gross book value of total assets at beginning of year	\$1,000.. 43 138
Production workers on March 15	number.. 2 411	Total capital expenditures (new and used)	\$1,000.. 3 939
Production workers on May 15	number.. 2 441	Capital expenditures for buildings and other structures	
Production workers on August 15	number.. 2 574	(new and used)	\$1,000.. 944
Production workers on November 15	number.. 2 670	Capital expenditures for machinery and equipment (new	
Production-worker hours	1,000.. 4 606	and used)	\$1,000.. 2 995
Production-worker wages	\$1,000.. 41 609	Total retirements ²	\$1,000.. 784
Total cost of materials	\$1,000.. 104 698	Gross book value of total assets at end of year	\$1,000.. 46 293
Cost of materials, parts, containers, etc., consumed	\$1,000.. 90 214	Total depreciation during year ²	\$1,000.. 3 778
Cost of resales	\$1,000.. 6 940	Total rental payments ²	\$1,000.. 12 029
Cost of fuels	\$1,000.. 715	Buildings and other structures rental payments ²	\$1,000.. 10 275
Cost of purchased electricity	\$1,000.. 1 248	Machinery and equipment rental payments ²	\$1,000.. 1 754
Cost of contract work	\$1,000.. 5 581	Cost of purchased services for the repair of buildings and other	
Quantity of electricity purchased for heat and power	1,000 kWh.. 15 998	structures ³	\$1,000.. 81
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Response coverage ratio ⁴	percent.. 29
Total value of shipments	\$1,000.. 299 802	Cost of purchased services for the repair of machinery and	
Primary products value of shipments	\$1,000.. 90 214	equipment ³	\$1,000.. 22
Secondary products value of shipments	\$1,000.. 8 778	Response coverage ratio ⁴	percent.. 29
Total miscellaneous receipts	\$1,000.. 13 071	Cost of purchased communications services ³	\$1,000.. 193
Value of resales	\$1,000.. 11 950	Response coverage ratio ⁴	percent.. 29
Contract receipts	\$1,000.. D	Cost of purchased legal services ³	\$1,000.. 234
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 29
Primary products specialization ratio	percent.. 96	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 217
Value of primary products shipments made in all industries	\$1,000.. 296 353	Response coverage ratio ⁴	percent.. 29
Value of primary products shipments made in this industry	\$1,000.. 277 953	Cost of purchased advertising services ³	\$1,000.. 1 987
Value of primary products shipments made in other		Response coverage ratio ⁴	percent.. 29
industries	\$1,000.. 18 400	Cost of purchased software and other data processing	
Coverage ratio	percent.. 93	services ³	\$1,000.. 154
		Response coverage ratio ⁴	percent.. 29
		Cost of purchased refuse removal (including hazardous waste)	
		services ³	\$1,000.. 22
		Response coverage ratio ⁴	percent.. 29

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339931, DOLL & STUFFED TOY MFG												
All establishments	1	240	31	3 392	63 722	2 524	4 606	41 609	193 676	104 698	299 802	3 939
Establishments with 1 to 4 employees	7	151	—	228	3 622	210	346	2 819	9 595	5 600	15 674	105
Establishments with 5 to 9 employees	3	31	—	210	3 943	151	291	2 725	11 422	11 011	22 440	691
Establishments with 10 to 19 employees	2	27	—	360	6 027	250	462	3 797	14 681	12 266	27 688	184
Establishments with 20 to 49 employees	—	17	17	530	11 470	370	668	6 943	30 973	20 051	52 147	341
Establishments with 50 to 99 employees	—	7	7	445	7 761	311	498	5 235	39 604	16 257	56 371	117
Establishments with 100 to 249 employees	—	5	5	D	D	D	D	D	D	D	D	D
Establishments with 250 to 499 employees	—	2	2	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	144	—	270	4 029	239	400	3 096	9 490	5 461	15 453	78

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339931	Doll & stuffed toy mfg	240	3 392	63 722	2 524	4 606	41 609	193 676	104 698	299 802	3 939

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339931	Dolls and stuffed toys	N	X	X	296 353	N	X	X	290 475
3399310	Dolls and toy animals, including accessories	N	X	X	296 353	N	X	X	290 475
33993101	Dolls, puppets, and other figures not stuffed	N	X	X	79 940	N	X	X	N
3399310106	Dolls, complete, more than 13 in., including mechanical/electrical (except stuffed dolls)	11	X	X	41 093	14	X	X	11 556
3399310111	Dolls, complete, 13 in. or less, including fashion dolls, action figures, and collectors' miniatures (except stuffed)	9	X	X	37 836	10	X	X	18 656
3399310131	Puppets, marionettes, and other animals and figures not stuffed	3	X	X	1 011	5	X	X	6 899
33993102	Doll parts (clothes, accessories, and playsets for dolls, including fashion dolls and action figures)	N	X	X	14 681	N	X	X	N
3399310216	Doll parts (clothes, accessories, and playsets for dolls, including fashion dolls and action figures)	5	X	X	14 681	7	X	X	19 161
33993103	Stuffed toys and dolls	N	X	X	175 760	N	X	X	N
3399310301	Stuffed dolls	15	X	X	33 637	12	X	X	33 421
3399310321	Stuffed toy animals	25	X	X	102 164	27	X	X	106 655
3399310326	Other stuffed toys	11	X	X	39 959	6	X	X	12 956
3399310Y	Dolls and stuffed toys, nsk	N	X	X	25 972	N	X	X	N
3399310YWW	Dolls and stuffed toys, nsk, for nonadministrative-record establishments	N	X	X	12 674	N	X	X	70 927
3399310YWY	Dolls and stuffed toys, nsk, for administrative-record establishments	N	X	X	13 298	N	X	X	10 244

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339931	DOLL & STUFFED TOY MFG				
33200005	Fabricated metal products, including forgings	X	D	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	88	X	D
33100041	All other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	D
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	6 262	X	2 063
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	898	X	848
31321023	Broadwoven fabrics (piece goods)	X	15 297	X	6 927
32213001	Paperboard (including news, chip, pasted, tablet, check, binders' board), except for shipping	X	D	X	895
32221001	Paperboard containers, boxes, and corrugated paperboard	X	1 115	X	933
32200003	Other paper products	X	177	X	167
32100025	Hardwood lumber, rough and dressed	X	D	X	D
32100031	Softwood lumber, rough and dressed	X	D	X	N
32100005	Other wood products (except lumber)	X	186	X	D
001900B4	Electronic components and accessories, including circuit boards and recording heads	X	D	X	N
33993100	Doll parts	X	20 175	X	15 736
00970099	All other materials and components, parts, containers, and supplies	X	12 916	X	16 525
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	27 936	X	30 579

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^p 10 to 19 percent estimated; ^q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339931 DOLL AND STUFFED TOY MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing complete dolls, doll parts, and doll clothes, action figures, and stuffed toys.

The data published with NAICS code 339931 include the following SIC industry:

3942 Dolls

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt				3399121101	3914111	3914111
3391121661	3841196	3841196				3399121106	3914131	3914131
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt				3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114W pt.	38430	38430	3399121121	3914153	3914153
			339114WYWW pt.	3699000 pt.	3699000 pt	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWW pt.	3843000	3843000	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWY pt.	3699002 pt.	3699002 pt			
3391123111	3841293	3841293	339114WYWY pt.	3843002	3843002			
3391123116	3841296	3841296				3399123 pt.	34790 pt.	34790 pt
3391123YWV	3841200	3841200						
			3391151	38511	38511	3399123 pt.	39142 pt.	39142 pt
339112W pt.	38290 pt.	38290 pt	3391151101	3851115	3851115	3399123101	3914211	3914211
			3391151106	3851117	3851117	3399123106	3914235	3914235
339112W pt.	38410	38410	3391151111	3851118	3851118	3399123111	3914241	3914241
339112WYWW pt.	3829000 pt.	3829000 pt	3391151116	3851119	3851119	3399123116	3914243	3914243
339112WYWW pt.	3841000	3841000	3391151YWV	3851100	3851100	3399123121	3914275	3914270 pt
339112WYWY pt.	3829002 pt.	3829002 pt				3399123126	3479024	3479021 pt
339112WYWY pt.	3841002	3841002	3391153	38514	38514	3399123YWV pt.	3479000 pt.	3479000 pt
			3391153101	3851431	3851431	3399123YWV pt.	3914200 pt.	3914200 pt
3391131	38421 pt.	38421 pt	3391153106	3851445	3851445			
339113101	3842101	3842101	3391153YWV	3851400	3851400	339912W pt.	34790 pt.	34790 pt
339113104	3842102	3842102						
3391131207	3842104	3842104	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
3391131211	3842105	3842105	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131214	3842106	3842106	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131217	3842107	3842107	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt.	3479002 pt
3391131217	3842108	3842108				339912WYWY pt.	3914002 pt.	3914002 pt
3391131224	3842109	3842109	3391157	38516	38516			
3391131227	3842110	3842110	3391157101	3851612	3851612	3399131	39152	39152
3391131231	3842112	3842112	3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
			3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
						3399131100 pt.	3915200 pt.	3915233
3391131234	3842113	3842113	339115B	38517	38517	3399133	39153	39153
3391131337	3842122	3842122	339115B101	3851702	3851702	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133YWV	3915300	3915300
3391131354	3842129	3842129	339115B121	3851719	3851719			
3391131457	3842131	3842131	339115B125	3851721	3851700 pt	3399135	39154	39154
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135100	3915400	3915400
3391131571	3842165	3842165						
			339115W	38510	38510	339913W	39150	39150
3391131574	3842183	3842183	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131577	3842185	3842185	339115WYWY	3851002	3851002	339913WYWY	3915002	3915002
3391131581	3842187	3842187						
3391131584	3842189	3842189	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160100 pt.	8072001	8072000 pt			
3391131591	3842197	3842197	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131594	3842198	3842198	3391160YWW	8072000 pt.	8072000 pt			
3391131YWV	3842100 pt.	3842100 pt	3391160YWY	8072002	8072000 pt	3399140 pt.	34998 pt.	34998 pt
3391135	38423	38423	3399111	39111	39111	3399140 pt.	39610	39610
3391135101	3842311	3842311	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135121	3842361	3842361	3399111526	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135126	3842373	3842373	3399111531	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135YWV	3842300	3842300	3399111537	3911198	3911198	3399140216	3961051	3961051
			3399111YWV	3911100	3911100	3399140221	3961072	3961072
3391137	25991	25991				3399140226 pt.	3479026	3479021 pt
3391137100	2599100	2599100				3399140226 pt.	3961098 pt.	3961096
			3399113	39113	39113	3399140226 pt.	3961098 pt.	3961099
339113W pt.	25990 pt.	25990 pt	3399113101	3911311	3911311	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113106 pt.	3911315 pt.	3911321	3399140YWW pt.	3499000 pt.	3499000 pt
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339113WYWW pt.	2599000 pt.	2599000 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3961000	3961000
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339113WYWY pt.	2599002 pt.	2599002 pt	3399113116	3911398	3911398	3399140YWY pt.	3499002 pt.	3499002 pt
339113WYWY pt.	3842002 pt.	3842002 pt	3399113YWV	3911300	3911300	3399140YWY pt.	3961002	3961002
3391141 pt.	36992 pt.	36992 pt	3399115 pt.	34790 pt.	34790 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
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3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323276 pt	3944499 pt	3944499	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323346	3944436	3944436	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323561	3944437	3944437	3399501YVW	3993100	3993100
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3399201YVW	3949100	3949100	3399323YVW	3944400	3944400			
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3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203206	3949241	3949241	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993222
3399203311	3949245	3949245	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993252 pt
3399203416	3949247	3949247	3399325121	3944521	3944521	3399503106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993288 pt
			3399325236	3944530	3944530	3399503111 pt	3993205 pt	3993232
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993262 pt
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3399205106	3949302	3949302						
3399205YVW	3949300	3949300						
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3399207	39494	39494	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207101	3949401	3949401	3399327101 pt	3944615 pt	3944618	3399503116 pt	3993207 pt	3993252 pt
3399207111	3949411	3949402 pt	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993272 pt
3399207121	3949421	3949406 pt	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993209 pt	3993262 pt
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3399207141	3949441	3949406 pt	3399327YVW	3944600	3944600	3399503126 pt	3993211 pt	3993272 pt
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3399207YVW	3949400	3949400	3399329100 pt	3944718 pt	3944714	3399503YVW	3993200	3993200
			3399329100 pt	3944718 pt	3944716			
3399209	39495	39495	339932W	39440 pt	39440 pt	3399505	39933	39933
3399209101	3949511	3949511	339932WYVW	3944000 pt	3944000 pt	3399505101	3993311	3993300 pt
3399209106	3949515	3949515	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
3399209111	3949527	3949527				3399505YVW	3993300	3993300 pt
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339920911A	3949569	3949569	3399411101	3951102	3951102	339950W	39930	39930
339920911F	3949575	3949575	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911K	3949577	3949577	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911P	3949581	3949593 pt	3399411YVW	3951100	3951100			
339920911U	3949592	3949592				3399911	30534	30534
339920911Y	3949583	3949593 pt	3399413	39512	39512	3399911111	3053415	3053415
			3399413101	3951202	3951202	3399911121 pt	3053419 pt	3053411
3399209121	3949530	3949530	3399413206	3951206	3951206	3399911121 pt	3053419 pt	3053418
3399209126	3949536	3949536	3399413YVW	3951200	3951200	3399911YVW	3053400	3053400
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339920912F	3949594	3949594	3399415	39513	39513	3399913	30535	30535
339920912K	3949595	3949595	3399415101	3951305	3951305	3399913111	3053515	3053515
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339920912U pt	3949599 pt	3949589	3399415111	3951313	3951313	3399913331	3053517	3053517
339920912U pt	3949599 pt	3949599	3399415116	3951325	3951325	3399913341	3053519	3053519
3399209131	3949537	3949537	3399415YVW	3951300	3951300	3399913351 pt	3053529 pt	3053511
3399209136	3949538	3949538				3399913351 pt	3053529 pt	3053513
			339941W	39510	39510	3399913351 pt	3053529 pt	3053521
3399209141	3949539	3949539	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053531 pt
3399209146	3949541	3949541	339941WYVW	3951002	3951002	3399913YVW	3053500	3053500
3399209151	3949551	3949551						
3399209156 pt	3949561 pt	3949564	3399421 pt	25311 pt	25311 pt			
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3399209166	3949585	3949585	3399421106	3952313	3952313	3399915221	3053622	3053622
3399209166	3949585	3949585	3399421111	3952322	3952322	3399915231	3053625	3053625
3399209171	3949572	3949553 pt	3399421316	2531191 pt	2531198 pt	3399915241	3053626	3053626
3399209176	3949574	3949553 pt	3399421YVW pt	2531100 pt	2531100 pt	3399915251	3053630	3053630
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3399209186	3949556	3949556	3399423	39524 pt	39524 pt			
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3399209193	3949565	3949571 pt	3399423206	3952421	3952419 pt	3399917111	3053729	3053729
3399209196	3949570	3949570	3399423YVW	3952400 pt	3952400 pt	3399917121	3053748	3053748
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339920W	39490	39490	3399425000 pt	3579900 pt	3579900 pt	3399918	30538	30538
339920WYVW	3949000	3949000	3399425000 pt	3579930	3579930	3399918111	3053810	3053810
339920WYVW	3949002	3949002	339942W pt	25310 pt	25310 pt	3399918121	3053813	3053813
						3399918131	3053815	3053815
3399310	39420	39420	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
3399310106	3942012	3942012	339942W pt	39520 pt	39520 pt	3399918251	3053817	3053817
3399310111	3942021	3942021	339942WYVW pt	2531000 pt	2531000 pt	3399918YVW	3053800	3053800
3399310131	3942056	3942056	339942WYVW pt	3579000 pt	3579000 pt			
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3399310301	3942008	3942008	339942WYVW pt	2531002 pt	2531002 pt	3399919111	3053970	3053970
3399310321	3942053	3942053	339942WYVW pt	3579002 pt	3579002 pt	3399919121	3053973	3053973
3399310326	3942054	3942054	339942WYVW pt	3952002 pt	3952002 pt	3399919131	3053975	3053975
3399310YVW	3942000	3942000				3399919141	3053977	3053977
3399310YVW	3942002	3942002				3399919151 pt	3053989 pt	3053979
			3399430	39530	39530	3399919151 pt	3053989 pt	3053981
3399321	39443 pt	39443 pt	3399430101	3953013	3953013	3399919YVW	3053900	3053900
3399321101	3944316	3944316	3399430106	3953015	3953015			
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3399321111	3944381	3944381	3399430316	3953035	3953035	339991YVW	3053000	3053000
3399321116	3944397	3944397	3399430321	3953037	3953037	339991YVW	3053002	3053002
3399321YVW	3944300 pt	3944300 pt	3399430326	3953098	3953098			
			3399430YVW	3953000	3953000	3399921	39311	39311
			3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931111
3399323	39444	39444				3399921101 pt	3931141 pt	3931115
3399323111	3944415	3944415	3399441	39551	39551	3399921106	3931151	3931151
3399323116	3944421	3944421	3399441101	3955115	3955115	3399921YVW	3931100	3931100
3399323121	3944423	3944423	3399441201	3955110	3955110			
3399323126	3944424	3944424	3399441211	3955120	3955120	3399923	39312	39312
3399323131	3944428	3944428	3399441YVW	3955100	3955100	3399923101	3931211	3931211
3399323201	3944411	3944411				3399923106	3931251	3931251
3399323206	3944413	3944413	3399443	39552	39552	3399923YVW	3931200	3931200
3399323236	3944429	3944429	3399443100	3955200	3955200			
3399323241	3944431	3944431				3399925	39313	39313
3399323256	3944439	3944439	339944W</					

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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3399941 pt.....	23924 pt.....	23924 pt.....						

Game, Toy, and Children's Vehicle Manufacturing

1997

Issued August 1999

EC97M-3399G

1997 Economic Census

Manufacturing

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Game, Toy, and Children's Vehicle Manufacturing

1997

Issued August 1999

EC97M-3399G

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339932	Game, toy, & children's vehicle mfg	752	781	29 375	767 211	21 570	39 905	432 624	2 672 997	1 870 746	4 535 554	136 243
394420	Games, toys, & children's vehicles (pt)	N	781	29 375	767 211	21 570	39 905	432 624	2 672 997	1 870 746	4 535 554	136 243

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339932, GAME, TOY, & CHILDREN'S VEHICLE MFG												
United States	1	781	211	29 375	767 211	21 570	39 905	432 624	2 672 997	1 870 746	4 535 554	136 243
Arizona	6	12	5	234	4 836	156	300	2 311	11 841	9 283	20 516	629
Arkansas	-	10	4	520	10 244	394	814	6 495	29 252	17 573	47 813	1 580
California	2	104	22	1 725	47 049	1 341	2 588	25 949	125 689	85 148	216 121	4 598
Illinois	-	54	14	1 841	54 772	1 236	2 207	24 687	129 186	180 921	314 535	19 037
Iowa	1	10	4	831	29 740	517	980	11 969	130 296	64 345	190 357	4 320
Maine	6	12	3	122	3 012	89	154	1 616	6 675	4 828	11 507	392
Maryland	-	12	3	461	14 423	356	673	9 102	28 672	25 522	54 010	2 437
Minnesota	1	19	3	224	7 814	123	167	1 453	30 642	7 320	37 618	1 916
Missouri	2	22	5	659	14 137	551	1 004	10 999	48 847	34 951	84 515	2 968
Nevada	-	10	5	258	7 947	189	361	4 591	17 542	15 220	32 786	1 308
New York	3	55	14	1 182	34 389	892	1 558	21 771	70 549	70 336	142 725	3 477
Oklahoma	-	8	2	138	2 531	111	210	1 800	4 280	5 019	9 491	323
Pennsylvania	1	48	19	1 744	40 012	1 291	2 470	24 075	150 807	77 348	225 161	3 897
Rhode Island	-	6	2	316	8 840	201	434	4 692	30 574	15 978	45 309	1 070
Texas	-	26	6	1 180	24 790	1 039	1 797	16 599	184 388	151 074	335 591	2 939
Washington	4	20	2	180	5 366	122	203	2 727	15 037	11 330	26 353	1 561
Wisconsin	4	17	6	233	5 357	188	343	3 362	15 129	9 391	25 029	1 121

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339932, GAME, TOY, & CHILDREN'S VEHICLE MFG		339932, GAME, TOY, & CHILDREN'S VEHICLE MFG	
— Con.		— Con.	
Companies ¹	number.. 752	Value added	\$1,000.. 2 672 997
All establishments	number.. 781	Total inventories, beginning of year	\$1,000.. 626 724
Establishments with 1 to 19 employees	number.. 570	Finished goods inventories, beginning of year	\$1,000.. 322 882
Establishments with 20 to 99 employees	number.. 149	Work-in-process inventories, beginning of year	\$1,000.. 77 912
Establishments with 100 employees or more	number.. 62	Materials and supplies inventories, beginning of year	\$1,000.. 225 930
All employees	number.. 29 375	Total inventories, end of year	\$1,000.. 618 706
Total compensation ²	\$1,000.. 944 579	Finished goods inventories, end of year	\$1,000.. 333 184
Annual payroll	\$1,000.. 767 211	Work-in-process inventories, end of year	\$1,000.. 75 799
Total fringe benefits	\$1,000.. 177 368	Materials and supplies inventories, end of year	\$1,000.. 209 723
Production workers, average for year	number.. 21 570	Gross book value of total assets at beginning of year	\$1,000.. 1 273 703
Production workers on March 15	number.. 21 205	Total capital expenditures (new and used)	\$1,000.. 136 243
Production workers on May 15	number.. 21 783	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 17 230
Production workers on August 15	number.. 21 888	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 119 013
Production workers on November 15	number.. 21 404	Total retirements ²	\$1,000.. 57 029
Production-worker hours	\$1,000.. 39 905	Gross book value of total assets at end of year	\$1,000.. 1 352 917
Production-worker wages	\$1,000.. 432 624	Total depreciation during year ²	\$1,000.. 120 350
Total cost of materials	\$1,000.. 1 870 746	Total rental payments ²	\$1,000.. 51 664
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 459 321	Buildings and other structures rental payments ²	\$1,000.. 35 158
Cost of resales	\$1,000.. 315 747	Machinery and equipment rental payments ²	\$1,000.. 16 506
Cost of fuels	\$1,000.. 13 205	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 7 616
Cost of purchased electricity	\$1,000.. 37 370	Response coverage ratio ⁴	percent.. 78
Cost of contract work	\$1,000.. 45 103	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 17 123
Quantity of electricity purchased for heat and power	1,000 kWh.. 621 817	Response coverage ratio ⁴	percent.. 78
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 6 773
Total value of shipments	\$1,000.. 4 535 554	Response coverage ratio ⁴	percent.. 78
Primary products value of shipments	\$1,000.. 3 659 665	Cost of purchased legal services ³	\$1,000.. 6 296
Secondary products value of shipments	\$1,000.. 284 023	Response coverage ratio ⁴	percent.. 78
Total miscellaneous receipts	\$1,000.. 591 866	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 3 875
Value of resales	\$1,000.. 543 664	Response coverage ratio ⁴	percent.. 78
Contract receipts	\$1,000.. 22 164	Cost of purchased advertising services ³	\$1,000.. 124 581
Other miscellaneous receipts	\$1,000.. 26 038	Response coverage ratio ⁴	percent.. 78
Primary products specialization ratio	percent.. 92	Cost of purchased software and other data processing services ³	\$1,000.. 6 057
Value of primary products shipments made in all industries	\$1,000.. 3 964 934	Response coverage ratio ⁴	percent.. 78
Value of primary products shipments made in this industry	\$1,000.. 3 659 665	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 2 266
Value of primary products shipments made in other industries	\$1,000.. 305 269	Response coverage ratio ⁴	percent.. 78
Coverage ratio	percent.. 92		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339932, GAME, TOY, & CHILDREN'S VEHICLE MFG												
All establishments	1	781	211	29 375	767 211	21 570	39 905	432 624	2 672 997	1 870 746	4 535 554	136 243
Establishments with 1 to 4 employees	9	367	—	626	14 074	528	874	8 563	31 731	29 328	61 239	2 549
Establishments with 5 to 9 employees	6	100	—	677	16 717	517	898	9 129	42 765	36 873	79 186	2 406
Establishments with 10 to 19 employees	2	103	—	1 403	35 615	996	1 852	19 083	86 750	76 877	166 013	5 420
Establishments with 20 to 49 employees	4	95	95	2 930	68 328	2 226	4 017	38 757	176 478	124 473	302 757	7 384
Establishments with 50 to 99 employees	1	54	54	3 903	97 959	2 845	5 464	52 198	270 567	226 183	497 418	15 579
Establishments with 100 to 249 employees	1	38	38	5 461	142 076	3 889	7 220	73 261	364 985	292 715	653 573	23 034
Establishments with 250 to 499 employees	—	14	14	4 369	117 090	3 522	6 685	74 011	376 915	267 282	641 697	25 639
Establishments with 500 to 999 employees	—	6	6	3 962	100 284	3 222	5 299	57 209	529 238	395 514	922 538	17 972
Establishments with 1,000 to 2,499 employees	—	4	4	6 044	175 068	3 825	7 596	100 413	793 568	421 501	1 211 133	36 260
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	313	—	864	16 924	713	1 127	10 368	41 201	37 887	79 080	3 326

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339932	Game, toy, & children's vehicle mfg	781	29 375	767 211	21 570	39 905	432 624	2 672 997	1 870 746	4 535 554	136 243
3399321	Baby carriages and children's vehicles, except bicycles with pneumatic tires	7	976	23 958	726	1 095	11 108	152 632	110 719	264 263	4 961
3399323	Toys, excluding games, hobbies, and electronic toys	115	13 302	318 095	9 844	18 694	190 804	1 251 589	940 226	2 179 521	75 016
3399325	Models (operating or static), craft, structural, and scientific equipment kits, sets, and individual units	108	5 478	145 157	3 859	7 416	76 311	434 909	289 118	716 233	23 350
3399327	Nonelectronic games	43	4 608	142 944	3 428	6 306	78 034	484 869	250 739	742 609	13 893
3399329	Electronic games and toys (excluding disks, tapes, and cartridges)	10	515	21 605	267	448	6 517	92 236	64 196	155 006	3 404

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339932	Games, toys, and children's vehicles	N	X	X	3 964 934	N	X	X	N
3399321	Baby carriages and children's vehicles, except bicycles with pneumatic tires	N	X	X	540 663	N	X	X	N
33993211	Baby carriages and children's vehicles, except bicycles with pneumatic tires	N	X	X	521 945	N	X	X	N
3399321101	Baby carriages and strollers	7	X	X	46 881	7	X	X	113 510
3399321106	Children's tricycles (including pedal and chain driven), plastics construction	3	X	X	D	N	X	X	N
3399321111	Parts for children's vehicles, sold separately	4	X	X	D	2	X	X	N
3399321116	Other children's vehicles (automobiles, tractors, two-wheel sidewalk cycles, scooters, wagons, baby walkers, and sleds) (excluding bicycles with pneumatic tires)	15	X	X	450 573	18	X	X	N
3399321Y	Baby carriages and children's vehicles, except bicycles with pneumatic tires, nsk	N	X	X	18 718	N	X	X	N
3399321YWV	Baby carriages and children's vehicles, except bicycles with pneumatic tires, nsk	N	X	X	18 718	N	X	X	N
3399323	Toys, excluding games, hobbies, and electronic toys	N	X	X	1 566 393	N	X	X	1 736 403
33993231	Nonpowered transportation toys and sets, including trains, nonriding, except model kits	N	X	X	106 433	N	X	X	N
3399323111	Toy trains and equipment (mechanical and electric)	5	X	X	31 484	7	X	X	66 952
3399323116	Plastics nonpowered transportation toys (nonriding, sold without accessories), except model kits, greater than 6 in. in length	4	X	X	34 451	8	X	X	91 823
3399323121	Other nonpowered transportation toys (nonriding, sold without accessories), except model kits, greater than 6 in. in length	4	X	X	34 964	7	X	X	67 427
3399323126	Other nonpowered transportation toys (nonriding, sold without accessories), except model kits, 6 in. in length or less	2	X	X	D	6	X	X	14 320
3399323131	Nonpowered transportation toy sets (nonriding, sold with accessories), except model kits	1	X	X	D	5	X	X	45 557
33993232	Other toys including doll carriages, strollers, carts, houses and furniture, musical toys and instruments, infant toys, nec	N	X	X	1 053 120	N	X	X	N
3399323201	Doll carriages, strollers, and doll carts	5	X	X	D	6	X	X	13 794
3399323206	Doll houses and furniture (excluding collectors' doll houses, miniatures, and accessories)	5	X	X	21 254	7	X	X	11 829
3399323236	Musical toys and toy musical instruments, except electronic	6	X	X	14 422	8	X	X	15 449
3399323241	Infant toys, nec, except games, hobbies, and electronic toys	5	X	X	D	8	X	X	72 236
3399323256	Children's coloring books and picture-word books, except games	7	X	X	50 340	21	X	X	107 992
3399323261	Juvenile-scale sporting goods and inflatables (including sand, water, gardening toys, etc)	11	X	X	46 567	16	X	X	92 619
3399323271	Parts for toys	8	X	X	15 412	18	X	X	59 240
3399323276	Toys, nec	69	X	X	599 182	N	X	X	N
33993233	Preschool playsets and toys, nec (excluding infants' toys, building toys, and electronic toys)	N	X	X	265 103	N	X	X	N
3399323346	Preschool playsets and toys, nec (excluding infants' toys, building toys, and electronic toys)	20	X	X	265 103	14	X	X	238 646
33993234	Toy guns, gun sets, and rifles	N	X	X	29 317	N	X	X	N
3399323451	Toy guns, gun sets, and rifles	3	X	X	29 317	8	X	X	34 434
33993235	Housekeeping and cooking toys (including tea sets and play tools)	N	X	X	92 417	N	X	X	N
3399323566	Housekeeping and cooking toys (including tea sets and play tools)	9	X	X	92 417	12	X	X	187 503
3399323Y	Toys, excluding games, hobbies, and electronic toys, nsk	N	X	X	20 003	N	X	X	N
3399323YWV	Toys, excluding games, hobbies, and electronic toys, nsk	N	X	X	20 003	N	X	X	18 867

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339932	Games, toys, and children's vehicles—Con.								
3399325	Models (operating or static), craft, structural, and scientific equipment kits, sets, and individual units	N	X	X	657 810	N	X	X	452 301
33993251	Electrically operated model railroads, operating model cars, boats, planes, and other models, static models, all materials and components and accessories for all models, operating and static	N	X	X	371 590	N	X	X	N
3399325101	Electrically operated model railroads (individual units, kits, sets, and accessories)	15	X	X	111 777	11	X	X	38 920
3399325106	Operating model cars, boats, planes, and other models (individual units, kits, and sets)	21	X	X	97 914	19	X	X	65 110
3399325111	Static models, other than plastics (all individual units, kits, sets, and structural kits, including railroad, car, boat, and plane)	16	X	X	51 137	6	X	X	8 994
3399325116	Plastics static models	10	X	X	96 581	6	X	X	80 944
3399325121	Components and accessories for all models (operating and static)	12	X	X	14 181	9	X	X	16 113
33993252	Craft kits and supplies individually packaged or in bulk, microscopes, chemistry sets, or any natural science kit or set, collectors' miniatures, except dolls	N	X	X	282 131	N	X	X	N
3399325226	Craft kits and supplies individually packaged or in bulk (decoupage, macrame, tiffany glass, beader, etc)	35	X	X	217 235	41	X	X	182 429
3399325231	Science: microscopes, chemistry sets, or any natural science kit or set (botany, mineralogy, electrical, etc)	6	X	X	26 714	6	X	X	15 652
3399325236	Collectors' miniatures (doll houses, accessories, soldiers or historic figures, scale cars, aircraft, etc.), except dolls	18	X	X	38 182	10	X	X	25 798
3399325Y	Hobbies: modelscraft, structural, and scientific equipment kits, sets, and individual units, nsk	N	X	X	4 089	N	X	X	N
3399325YVV	Hobbies: modelscraft, structural, and scientific equipment kits, sets, and individual units, nsk	N	X	X	4 089	N	X	X	18 341
3399327	Nonelectronic games	N	X	X	645 259	N	X	X	632 311
33993271	Board games	N	X	X	282 069	N	X	X	N
3399327101	Board games	21	X	X	282 069	N	X	X	N
33993272	Nonelectronic action and skill games, puzzles, and parts for games, excluding electronic parts	N	X	X	361 492	N	X	X	N
3399327206	Sports-oriented nonelectronic action and skill games (football, baseball, etc)	7	X	X	77 713	7	X	X	55 552
3399327211	Nonsports-oriented nonelectronic action and skill games	5	X	X	D	7	X	X	111 400
3399327216	Puzzles	16	X	X	128 658	18	X	X	93 798
3399327221	Other nonelectronic games	22	X	X	58 984	24	X	X	D
3399327226	Parts for games (excluding electronic parts)	7	X	X	D	8	X	X	16 287
3399327Y	Nonelectronic games, nsk	N	X	X	1 698	N	X	X	N
3399327YVV	Nonelectronic games, nsk	N	X	X	1 698	N	X	X	9 754
3399329	Electronic games and toys (excluding disks, tapes, and cartridges)	N	X	X	191 525	N	X	X	63 976
33993291	Electronic games and toys (excluding disks, tapes, and cartridges)	N	X	X	191 525	N	X	X	N
3399329100	Electronic games and toys (excluding disks, tapes, and cartridges)	14	X	X	191 525	N	X	X	N
339932W	Games, toys, and children's vehicles, nsk	N	X	X	363 284	N	X	X	N
339932WY	Games, toys, and children's vehicles, nsk	N	X	X	363 284	N	X	X	N
339932WYVV	Games, toys, and children's vehicles, nsk, for nonadministrative-record establishments	N	X	X	294 221	N	X	X	N
339932WYVY	Games, toys, and children's vehicles, nsk, for administrative-record establishments	N	X	X	69 063	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399321	BABY CARRIAGES AND CHILDREN'S VEHICLES, EXCEPT BICYCLES WITH PNEUMATIC TIRES		
	United States	540 663	N
	Ohio	113 892	N
3399323	TOYS, EXCLUDING GAMES, HOBBIES, AND ELECTRONIC TOYS		
	United States	1 566 393	1 736 403
	California	48 589	46 707
	Illinois	128 957	101 479
	Massachusetts	88 295	23 238
	Missouri	38 667	45 574
	New Jersey	83 069	46 942
	New York	55 652	150 990
	North Carolina	9 838	N
	Ohio	184 766	266 546
	Oklahoma	6 290	N
	Oregon	7 551	N
	Pennsylvania	149 422	75 606
	Vermont	2 262	N
3399325	MODELS (OPERATING OR STATIC), CRAFT, STRUCTURAL, AND SCIENTIFIC EQUIPMENT KITS, SETS, AND INDIVIDUAL UNITS		
	United States	657 810	452 301
	California	46 281	47 978
	Florida	3 430	N
	Illinois	84 070	69 797
	Maryland	3 866	N
	Massachusetts	19 954	18 555
	New Jersey	44 072	23 971
	New York	47 771	29 934
	North Carolina	8 198	N
	Ohio	27 036	25 166
	Pennsylvania	67 402	58 046
	Virginia	3 147	N
3399327	NONELECTRONIC GAMES		
	United States	645 259	632 311
	California	13 115	24 830
	Illinois	15 113	N
	New York	2 476	N
3399329	ELECTRONIC GAMES AND TOYS (EXCLUDING DISKS, TAPES, AND CARTRIDGES)		
	United States	191 525	63 976

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339932	GAME, TOY, & CHILDREN'S VEHICLE MFG				
33200005	Fabricated metal products, including forgings	X	31 794	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	24 895	X	N
33100041	All other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	N
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	326 897	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	144 876	X	N
31321023	Broadwoven fabrics (piece goods)	X	23 098	X	N
32213001	Paperboard (including news, chip, pasted, tablet, check, binders' board), except for shipping	X	79 891	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	154 518	X	N
32200003	Other paper products	X	46 533	X	N
32100025	Hardwood lumber, rough and dressed	X	21 740	X	N
32100031	Softwood lumber, rough and dressed	X	11 265	X	N
32100005	Other wood products (except lumber)	X	13 596	X	N
001900B4	Electronic components and accessories, including circuit boards and recording heads	X	58 927	X	N
33993100	Doll parts	X	D	X	N
00970099	All other materials and components, parts, containers, and supplies	X	334 890	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	163 173	X	N

Table 7. Materials Consumed by Kind: 1997 and 1992—Con.

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^p 10 to 19 percent estimated; ^q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339932 GAME, TOY, AND CHILDREN'S VEHICLE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing games (including electronic), toys, and children's vehicles (except bicycles and metal tricycles).

The data published with NAICS code 339932 include the following SIC industry:

3944 Games, toys, and children's vehicles (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339932 do not include establishments primarily engaged in the manufacture of rubber toys, except dolls or embroidery kits. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3843000 pt.	3843000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3699002 pt.	3699002 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114WYWW pt.	3843002	3843002	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114YWV pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWV	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWV	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWV	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWV	3851400	3851400	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWV	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWV	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
			3391160	80720	80720	339913W	39150	39150
3391131574	3842183	3842183	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072000 pt.	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160YWW	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWV	8072002	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191				3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3399111	39111	39111			
3391131594	3842198	3842198	3399111101	3911111	3911111	3399140 pt.	39610	39610
3391131YWV	3842100 pt.	3842100 pt	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961031
			3399111311	3911114	3911114	3399140111 pt.	3961032 pt.	3961041 pt
3391135	38423	38423	3399111421 pt.	3911121 pt.	3911131	3399140118	3499895	3499899 pt
3391135101	3842311	3842311	3399111516	3911115	3911115	3399140201	3961011	3961011
3391135106	3842321	3842321	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961021
3391135111	3842322	3842322	3399111531	3911198	3911198	3399140206 pt.	3961022 pt.	3961041 pt
3391135116	3842351	3842351	3399111YWV	3911100	3911100	3399140216	3961051	3961051
3391135121	3842361	3842361				3399140221	3961072	3961072
3391135126	3842373	3842373	3399113	39113	39113	3399140226 pt.	3479026 pt.	3479021 pt
3391135YWV	3842300	3842300	3399113101	3911311	3911311	3399140226 pt.	3961098 pt.	3961096
			3399113106 pt.	3911315 pt.	3911321			
3391137	25991	25991	3399113106 pt.	3911315 pt.	3911341 pt	3399140226 pt.	3961098 pt.	3961099
3391137100	2599100	2599100	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113116 pt.	3911398	3911398	3399140YWW pt.	3499000 pt.	3499000 pt
339113W pt.	25990 pt.	25990 pt	3399113YWV	3911300	3911300	3399140YWW pt.	3499800 pt.	3499800 pt
						3399140YWW pt.	3961000	3961000
339113W pt.	38420 pt.	38420 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	2599000 pt.	2599000 pt				3399140YWW pt.	3499002 pt.	3499002 pt
339113WYWW pt.	3842000 pt.	3842000 pt						
339113WYWW pt.	2599002 pt.	2599002 pt						
339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399323276 pt	3944400	3944400			
3399201YVW	3949100	3949100	3399325	39445	39445	3399503	39932	39932
			3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203	39492	39492	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203101	3949231	3949231	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203206	3949241	3949241	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203311	3949245	3949245	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203416	3949247	3949247	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325236	3944530	3944530	3399503111 pt	3993205 pt	3993288 pt
			3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205	39493	39493	3399327	39446	39446			
3399205101	3949301	3949301	3399327101 pt	3944615 pt	3944615	3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302	3399327101 pt	3944615 pt	3944615			
3399205YVW	3949300	3949300	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993278 pt
			3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993272 pt
3399207	39494	39494	3399327216	3944627	3944627	3399503116 pt	3993207 pt	3993276 pt
3399207101	3949401	3949401	3399327221	3944695	3944695	3399503116 pt	3993209 pt	3993288 pt
3399207111	3949411	3949402 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993262 pt
3399207121	3949421	3949406 pt	3399327YVW	3944600	3944600	3399503121 pt	3993211 pt	3993278 pt
3399207131 pt	3949431 pt	3949406 pt				3399503126 pt	3993211 pt	3993252 pt
3399207131 pt	3949431 pt	3949406 pt	3399329	39447	39447	3399503126 pt	3993211 pt	3993272 pt
3399207141	3949441	3949406 pt	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993276 pt
3399207151	3949451	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949404	3399329100 pt	3944718 pt	3944714	3399503YVW	3993200	3993200
3399207199 pt	3949499 pt	3949405	3399329100 pt	3944718 pt	3944716			
3399207199 pt	3949499 pt	3949406 pt						
3399207YVW	3949400	3949400	339932W	39440 pt	39440 pt	3399505	39933	39933
			339932WYVW	3944000 pt	3944000 pt	3399505101	3993311	3993300 pt
3399209	39495	39495	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
3399209101	3949511	3949511				3399505YVW	3993300	3993300 pt
3399209106	3949515	3949515	3399411	39511	39511			
3399209111	3949527	3949527	3399411101	3951102	3951102	339950W	39930	39930
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911A	3949569	3949569	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911F	3949575	3949575	3399411YVW	3951100	3951100			
339920911K	3949577	3949577				3399911	30534	30534
339920911P	3949581	3949593 pt	3399413	39512	39512	3399911111	3053415	3053415
339920911U	3949592	3949592	3399413101	3951202	3951202	3399911121 pt	3053419 pt	3053411
339920911Y	3949583	3949593 pt	3399413206	3951206	3951206	3399911121 pt	3053419 pt	3053418
			3399413YVW	3951200	3951200	3399911YVW	3053400	3053400
3399209121	3949530	3949530						
3399209126	3949536	3949536	3399415	39513	39513	3399913	30535	30535
339920912A	3949596	3949596	3399415101	3951305	3951305	3399913111	3053515	3053515
339920912F	3949594	3949594	3399415106	3951310	3951310	3399913221	3053524	3053531 pt
339920912K	3949595	3949595	3399415111	3951313	3951313	3399913331	3053517	3053517
339920912P	3949597	3949597	3399415116	3951325	3951325	3399913341	3053519	3053519
339920912U	3949599 pt	3949599	3399415YVW	3951300	3951300	3399913351 pt	3053529 pt	3053511
339920912U pt	3949599 pt	3949599				3399913351 pt	3053529 pt	3053513
3399209131	3949537	3949537	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053521
3399209136	3949538	3949538	339941WYVW	3951002	3951002	3399913351 pt	3053529 pt	3053531 pt
						3399913YVW	3053500	3053500
3399209141	3949539	3949539	3399421 pt	25311 pt	25311 pt			
3399209146	3949541	3949541				3399915	30536	30536
3399209151	3949551	3949551	3399421101	39523	39523	3399915111	3053621	3053621
3399209156 pt	3949561 pt	3949564	3399421106	3952310	3952310	3399915221	3053622	3053622
3399209156 pt	3949561 pt	3949586	3399421111	3952313	3952313	3399915231	3053625	3053625
3399209161	3949591	3949591	3399421211	3952322	3952322	3399915241	3053626	3053626
3399209166	3949585	3949585	3399421316	2531191 pt	2531198 pt	3399915251	3053630	3053630
3399209166	3949585	3949585	3399421YVW pt	2531100 pt	2531100 pt	3399915261	3053635	3053635
3399209171	3949572	3949553 pt	3399421YVW pt	3952300	3952300	3399915YVW	3053600	3053600
3399209176	3949574	3949553 pt						
3399209181	3949576	3949553 pt	3399423	39524 pt	39524 pt	3399917	30537	30537
			3399423101	3952414	3952413 pt	3399917111	3053729	3053729
3399209186	3949556	3949556	3399423206	3952421	3952419 pt	3399917121	3053748	3053748
3399209191	3949571	3949571 pt	3399423YVW	3952400 pt	3952400 pt	3399917YVW	3053700	3053700
3399209193	3949565	3949571 pt						
3399209196	3949570	3949570				3399918	30538	30538
3399209YVW	3949500	3949500	3399425	35799 pt	35799 pt	3399918111	3053810	3053810
			3399425000 pt	3579900 pt	3579900 pt	3399918121	3053813	3053813
			3399425000 pt	3579930	3579930	3399918131	3053815	3053815
339920W	39490	39490				3399918141	3053819	3053819
339920WYVW	3949000	3949000	339942W pt	25310 pt	25310 pt	3399918251	3053817	3053817
339920WYVW	3949002	3949002	339942W pt	35790 pt	35790 pt	3399918YVW	3053800	3053800
3399310	39420	39420	339942W pt	39520 pt	39520 pt	3399919	30539	30539
3399310106	3942012	3942012	339942WYVW pt	2531000 pt	2531000 pt	3399919111	3053970	3053970
3399310111	3942021	3942021	339942WYVW pt	3579000 pt	3579000 pt	3399919121	3053973	3053973
3399310131	3942056	3942056	339942WYVW pt	3952000 pt	3952000 pt	3399919131	3053975	3053975
3399310216	3942043	3942043	339942WYVW pt	2531002 pt	2531002 pt	3399919141	3053977	3053977
3399310301	3942008	3942008	339942WYVW pt	3579002 pt	3579002 pt	3399919151 pt	3053989 pt	3053979
3399310321	3942053	3942053	339942WYVW pt	3952002 pt	3952002 pt	3399919151 pt	3053989 pt	3053981
3399310326	3942054	3942054				3399919YVW	3053900	3053900
3399310YVW	3942000	3942000						
3399310YVW	3942002	3942002	3399430	39530	39530			
			3399430101	3953013	3953013	339991W	30530	30530
3399321	39443 pt	39443 pt	3399430106	3953015	3953015	339991WYVW	3053000	3053000
3399321101	3944316	3944316	3399430211	3953033	3953033	339991WYVW	3053002	3053002
3399321106	3944326	3944346 pt	3399430316	3953035	3953035			
3399321111	3944381	3944381	3399430321	3953037	3953037			
3399321116	3944397	3944397	3399430326	3953098	3953098	3399921	39311	39311
3399321YVW	3944300 pt	3944300 pt	3399430YVW	3953000	3953000	3399921101 pt	3931141 pt	3931111
			3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931115
						3399921106	3931151	3931151
3399323	39444	39444				3399921YVW	3931100	3931100
3399323111	3944415	3944415	3399441	39551	39551			
3399323116	3944421	3944421	3399441106	3955115	3955115	3399923	39312	39312
3399323121	3944423	3944423	3399441201	3955110	3955110	3399923101	3931211	3931211
3399323126	3944424	3944424	3399441211	3955120	3955120	3399923106	3931251	3931251
3399323131	3944428	3944428	3399441YVW	3955100	3955100	3399923YVW	3931200	3931200
3399323201	3944411	3944411						
3399323206	3944413	3944413	3399443	39552	39552	3399925	39313	39313
3399323236	3944429	3944429	3399443100	3955200	3955200	3399925101	3931311	3931311
3399323241	3944431	3944431				3399925106	3931351	3931351
3399323256	3944439	3944439	339944W	39550	39550	3399925YVW	3931300	3931300

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399927.....	39314.....	39314.....	3399941 pt.....	39911.....	39911.....	339995W.....	39950.....	39950.....
3399927116 pt.....	3931437 pt.....	3931450.....	3399941101.....	3991113.....	3991113.....	339995WYWWW.....	3995000.....	3995000.....
3399927116 pt.....	3931437 pt.....	3931452.....	3399941106.....	3991198.....	3991198.....	339995WYWWY.....	3995002.....	3995002.....
3399927201.....	3931413.....	3931413.....	3399941311.....	2392471.....	2392471.....			
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3399927221.....	3931488.....	3931488.....	3399941YVW pt.....	2392400 pt.....	2392400 pt.....	3399991106.....	3999117.....	3999117.....
3399927226.....	3931498.....	3931498.....	3399941YVW pt.....	3991100.....	3991100.....	3399991111.....	3999140.....	3999140.....
3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
3399927YVW.....	3931400.....	3931400.....	3399943.....	39912.....	39912.....	3399991121.....	3999171.....	3999171.....
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			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
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3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
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3399933YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
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339993W pt.....	31310 pt.....	31310 pt.....						
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339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYVW pt.....	3999000 pt.....	3999000 pt.....
339993WYVW pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYVW pt.....	2499002 pt.....	2499002 pt.....
339993WYVW pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYVW pt.....	3999002 pt.....	3999002 pt.....
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Pen and Mechanical Pencil Manufacturing

1997

Issued August 1999

EC97M-3399H

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Pen and Mechanical Pencil Manufacturing

1997

Issued August 1999

EC97M-3399H

1997 Economic Census

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Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339941	Pen & mechanical pencil mfg ..	107	112	8 394	261 580	6 000	11 994	157 989	954 982	673 281	1 590 770	53 963
395100	Pens & mechanical pencils	N	112	8 394	261 580	6 000	11 994	157 989	954 982	673 281	1 590 770	53 963

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339941, PEN & MECHANICAL PENCIL MFG												
United States	-	112	51	8 394	261 580	6 000	11 994	157 989	954 982	673 281	1 590 770	53 963
Connecticut	5	3	2	120	3 933	69	145	1 894	21 017	15 735	38 847	869
Massachusetts	7	7	3	219	6 528	167	323	4 637	16 472	8 317	24 657	1 015
New Jersey	4	17	5	382	10 900	319	622	7 224	27 545	19 249	46 627	1 564
New York	2	17	7	470	11 806	338	592	5 599	26 998	19 284	46 417	2 720
Pennsylvania	-	4	2	127	3 363	89	191	2 133	7 342	6 703	14 021	95
Rhode Island	-	5	5	1 128	39 020	866	1 619	23 452	102 152	44 167	145 933	7 682
Tennessee	-	4	3	1 330	31 529	835	1 771	17 818	207 584	121 153	312 027	4 470
Wisconsin	-	4	3	704	19 625	510	903	11 679	48 155	79 780	119 791	5 014

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339941, PEN & MECHANICAL PENCIL MFG		339941, PEN & MECHANICAL PENCIL MFG—Con.	
Companies ¹ number..	107	Value added \$1,000..	954 982
All establishments number..	112	Total inventories, beginning of year \$1,000..	227 728
Establishments with 1 to 19 employees number..	61	Finished goods inventories, beginning of year \$1,000..	106 516
Establishments with 20 to 99 employees number..	33	Work-in-process inventories, beginning of year \$1,000..	54 696
Establishments with 100 employees or more number..	18	Materials and supplies inventories, beginning of year \$1,000..	66 516
All employees number..	8 394	Total inventories, end of year \$1,000..	269 961
Total compensation ² \$1,000..	332 192	Finished goods inventories, end of year \$1,000..	146 906
Annual payroll \$1,000..	261 580	Work-in-process inventories, end of year \$1,000..	51 799
Total fringe benefits \$1,000..	70 612	Materials and supplies inventories, end of year \$1,000..	71 256
Production workers, average for year number..	6 000	Gross book value of total assets at beginning of year \$1,000..	535 325
Production workers on March 15 number..	6 107	Total capital expenditures (new and used) \$1,000..	53 963
Production workers on May 15 number..	5 965	Capital expenditures for buildings and other structures (new and used) \$1,000..	8 646
Production workers on August 15 number..	5 968	Capital expenditures for machinery and equipment (new and used) \$1,000..	45 317
Production workers on November 15 number..	5 960	Total retirements ² \$1,000..	8 451
Production-worker hours 1,000..	11 994	Gross book value of total assets at end of year \$1,000..	580 837
Production-worker wages \$1,000..	157 989	Total depreciation during year ² \$1,000..	47 005
Total cost of materials \$1,000..	673 281	Total rental payments ² \$1,000..	8 169
Cost of materials, parts, containers, etc., consumed \$1,000..	553 663	Buildings and other structures rental payments ² \$1,000..	5 761
Cost of resales \$1,000..	79 145	Machinery and equipment rental payments ² \$1,000..	2 408
Cost of fuels \$1,000..	1 236	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	1 982
Cost of purchased electricity \$1,000..	10 545	Response coverage ratio ⁴ percent..	86
Cost of contract work \$1,000..	28 692	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	4 885
Quantity of electricity purchased for heat and power 1,000 kWh..	180 260	Response coverage ratio ⁴ percent..	86
Quantity of electricity generated less sold for heat and power 1,000 kWh..	—	Cost of purchased communications services ³ \$1,000..	5 109
Total value of shipments \$1,000..	1 590 770	Response coverage ratio ⁴ percent..	86
Primary products value of shipments \$1,000..	1 312 560	Cost of purchased legal services ³ \$1,000..	2 480
Secondary products value of shipments \$1,000..	148 353	Response coverage ratio ⁴ percent..	86
Total miscellaneous receipts \$1,000..	129 857	Cost of purchased accounting and bookkeeping services ³ \$1,000..	2 283
Value of resales \$1,000..	125 888	Response coverage ratio ⁴ percent..	86
Contract receipts \$1,000..	511	Cost of purchased advertising services ³ \$1,000..	29 675
Other miscellaneous receipts \$1,000..	3 458	Response coverage ratio ⁴ percent..	86
Primary products specialization ratio percent..	89	Cost of purchased software and other data processing services ³ \$1,000..	2 024
Value of primary products shipments made in all industries \$1,000..	1 601 707	Response coverage ratio ⁴ percent..	86
Value of primary products shipments made in this industry \$1,000..	1 312 560	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	1 401
Value of primary products shipments made in other industries \$1,000..	289 147	Response coverage ratio ⁴ percent..	86
Coverage ratio percent..	81		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339941, PEN & MECHANICAL PENCIL MFG												
All establishments	-	112	51	8 394	261 580	6 000	11 994	157 989	954 982	673 281	1 590 770	53 963
Establishments with 1 to 4 employees	9	32	-	56	1 787	45	78	1 077	4 831	2 747	7 531	394
Establishments with 5 to 9 employees	8	12	-	76	2 167	55	96	1 331	5 260	3 121	8 357	389
Establishments with 10 to 19 employees	6	17	-	235	5 961	171	334	3 677	17 673	9 803	27 494	1 246
Establishments with 20 to 49 employees	2	14	14	465	12 760	314	545	6 332	28 704	21 865	51 211	1 443
Establishments with 50 to 99 employees	2	19	19	1 263	34 834	941	1 773	22 331	135 881	83 320	222 132	5 675
Establishments with 100 to 249 employees	-	9	9	D	D	D	D	D	D	D	D	D
Establishments with 250 to 499 employees	5	2	2	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	-	7	7	4 238	148 150	2 877	6 006	90 114	565 639	441 484	973 241	39 567
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	48	-	207	5 899	154	277	3 557	15 823	8 898	24 581	1 299

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339941	Pen & mechanical pencil mfg	112	8 394	261 580	6 000	11 994	157 989	954 982	673 281	1 590 770	53 963
3399411	Pens	27	5 633	175 165	4 029	7 850	110 595	639 514	424 296	1 029 767	40 549
3399413	Markers	10	1 233	45 979	838	1 973	22 661	214 289	178 966	387 988	8 119
3399415	Other pens, mechanical pencils, and parts	16	1 057	27 696	789	1 563	17 160	68 130	51 099	121 016	2 678

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339941	Pens and mechanical pencils	N	X	X	1 601 707	N	X	X	1 240 380
3399411	Pens	N	X	X	807 241	N	X	X	592 805
33994111	Refillable ballpoint pens	N	X	X	246 178	N	X	X	N
3399411101	Refillable ballpoint pens	22	X	X	246 178	32	X	X	297 159
33994112	Nonrefillable ballpoint pens	N	X	X	332 438	N	X	X	N
3399411206	Nonrefillable ballpoint pens	24	X	X	332 438	21	X	X	218 942
33994113	Roller pens	N	X	X	221 965	N	X	X	N
3399411311	Roller pens	15	X	X	221 965	13	X	X	74 314
3399411Y	Pens, nsk	N	X	X	6 660	N	X	X	N
3399411YWV	Pens, nsk	N	X	X	6 660	N	X	X	2 390
3399413	Markers	N	X	X	488 449	N	X	X	366 313
33994131	Fine-point markers (thin-line writing pens)	N	X	X	187 036	N	X	X	N
3399413101	Fine-point markers (thin-line writing pens)	12	X	X	187 036	17	X	X	106 215
33994132	Broad-tipped markers (thick-line coloring pens and markers)	N	X	X	300 091	N	X	X	N
3399413206	Broad-tipped markers (thick-line coloring pens and markers)	23	X	X	300 091	19	X	X	259 596
3399413Y	Markers, nsk	N	X	X	1 322	N	X	X	N
3399413YWV	Markers, nsk	N	X	X	1 322	N	X	X	502
3399415	Other pens, mechanical pencils, and parts	N	X	X	254 336	N	X	X	260 848
33994151	Other pens, mechanical pencils, and parts	N	X	X	213 809	N	X	X	N
3399415101	Mechanical pencils, including clutch action and twist action	13	X	X	67 766	14	X	X	74 118
3399415106	Ballpoint pen refill cartridges	10	X	X	21 247	10	X	X	27 946
3399415111	All other refill cartridges (for fountain and roller pens, fine-point markers, etc)	5	X	X	3 698	8	X	X	23 572
3399415116	All other pens and mechanical pencil parts (including pen points, renewal parts, fountain pens, desk sets, etc)	33	X	X	121 098	33	X	X	132 495
3399415Y	Other pens, mechanical pencils, and parts, nsk	N	X	X	40 527	N	X	X	N
3399415YWV	Other pens, mechanical pencils, and parts, nsk	N	X	X	40 527	N	X	X	2 717
339941W	Pens and mechanical pencils, nsk	N	X	X	51 681	N	X	X	20 414
339941WY	Pens and mechanical pencils, nsk	N	X	X	51 681	N	X	X	N
339941WYWW	Pens and mechanical pencils, nsk, for nonadministrative-record establishments	N	X	X	28 419	N	X	X	8 680
339941WYWY	Pens and mechanical pencils, nsk, for administrative-record establishments	N	X	X	23 262	N	X	X	11 734

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399411	PENS		
	United States	807 241	592 805
	New York	21 244	19 899
	Pennsylvania	5 457	6 069
	Tennessee	164 220	38 020
3399413	MARKERS		
	United States	488 449	366 313
	New York	13 746	N

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399415	OTHER PENS, MECHANICAL PENCILS, AND PARTS		
	United States	254 336	260 848
	California	42 143	27 210
	Illinois	6 510	N
	New Jersey	27 661	33 955
	New York	3 620	5 547
	Rhode Island	41 019	59 626

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339941	PEN & MECHANICAL PENCIL MFG				
32100001	Lumber and wood products, except furniture	X	D	X	D
32221001	Paperboard containers, boxes, and corrugated paperboard	X	35 442	X	40 058
32513005	Pigments, lakes, and toners; organic and inorganic	X	D	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	2 574	X	D
32500059	Other chemicals and allied products	X	13 169	X	28 967
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	67 895	X	26 502
32700001	Stone, clay, glass, and concrete products	X	D	X	N
33200005	Fabricated metal products, including forgings	X	41 945	X	27 730
33994100	Parts for pens and mechanical pencils	X	179 107	X	156 554
00970099	All other materials and components, parts, containers, and supplies	X	110 745	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	34 653	X	12 633

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339941 PEN AND MECHANICAL PENCIL MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing pens, ballpoint pen refills and cartridges, mechanical pencils, and felt tipped markers.

The data published with NAICS code 339941 include the following SIC industry:

3951 Pens and mechanical pencils

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	38430	38430	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3699000 pt.	3699000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3843000	3843000	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	339114WYWW pt.	3699002 pt.	3699002 pt	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	339114WYWW pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWW	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWW	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWW	3851400	3851400	3399123YWW pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWW	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWW	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWW	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
			3391160	80720	80720	339913W	39150	39150
3391131574	3842183	3842183	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072000 pt.	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160YWW	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWW	8072002	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160YWW	8072002	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWW	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131598	3842198	3842198	3399111	39111	39111	3399140 pt.	39610	39610
3391131YWW	3842100 pt.	3842100 pt	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
			3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135	38423	38423	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135101	3842311	3842311	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135106	3842321	3842321	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135111	3842322	3842322	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135116	3842351	3842351	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135121	3842361	3842361	3399111YWW	3911100	3911100	3399140221	3961072	3961072
3391135126	3842373	3842373				3399140226 pt.	3479026	3479021 pt
3391135YWW	3842300	3842300	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
			3399113101	3911311	3911311			
3391137	25991	25991	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
3391137100	2599100	2599100	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113W pt.	25990 pt.	25990 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3499800 pt.	3499800 pt
			3399113YWW	3911300	3911300	3399140YWW pt.	3961000	3961000
339113W pt.	38420 pt.	38420 pt				3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3499002 pt.	3499002 pt
339113WYWW pt.	3842000 pt.	3842000 pt						
339113WYWW pt.	2599002 pt.	2599002 pt						
339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399323566	3944443	3944443			
3399201YVW	3949100	3949100	3399323YVW	3944400	3944400			
			3399325	39445	39445	3399503	39932	39932
3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203206	3949241	3949241	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203311	3949245	3949245	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203416	3949247	3949247	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203421	3949298	3949298	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203YVW	3949200	3949200	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
			3399325236	3944530	3944530	3399503106 pt	3993203 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301				3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302						
3399205YVW	3949300	3949300						
			3399327	39446	39446	3399503111 pt	3993205 pt	3993278 pt
3399207	39494	39494	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207101	3949401	3949401	3399327101 pt	3944615 pt	3944618	3399503116 pt	3993207 pt	3993252 pt
3399207111	3949411	3949402 pt	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993272 pt
3399207121	3949421	3949406 pt	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993276 pt
3399207131 pt	3949431 pt	3949402 pt	3399327221	3944627	3944627	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949403	3399327221	3944627	3944627	3399503121 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949406 pt	3399327YVW	3944600	3944600	3399503121 pt	3993209 pt	3993278 pt
3399207141	3949441	3949406 pt				3399503126 pt	3993211 pt	3993252 pt
3399207151	3949451	3949406 pt	3399329	39447	39447	3399503126 pt	3993211 pt	3993272 pt
3399207199 pt	3949499 pt	3949404	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949405	3399329100 pt	3944718 pt	3944712	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944714	3399503YVW	3993200	3993200
3399207YVW	3949400	3949400	3399329100 pt	3944718 pt	3944716			
			339932W	39440 pt	39440 pt	3399505	39933	39933
3399209	39495	39495	339932WYVW	3944000 pt	3944000 pt	33995050101	3993311	3993300 pt
3399209101	3949511	3949511	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
3399209106	3949515	3949515				3399505YVW	3993300	3993300 pt
3399209111	3949527	3949527	3399411	39511	39511			
3399209116	3949528	3949528	3399411101	3951102	3951102	339950W	39930	39930
339920911A	3949569	3949569	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911F	3949575	3949575	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911K	3949577	3949577	3399411YVW	3951100	3951100			
339920911P	3949581	3949593 pt	3399413	39512	39512	3399911	30534	30534
339920911U	3949592	3949592	3399413101	3951202	3951202	3399911111	3053415	3053415
339920911Y	3949583	3949593 pt	3399413206	3951206	3951206	3399911121 pt	3053419 pt	3053411
			3399413YVW	3951200	3951200	3399911121 pt	3053419 pt	3053418
						3399911YVW	3053400	3053400
3399209121	3949530	3949530	3399415	39513	39513			
3399209126	3949536	3949536	3399415101	3951305	3951305	3399913	30535	30535
339920912A	3949596	3949596	3399415106	3951310	3951310	3399913111	3053515	3053515
339920912F	3949594	3949594	3399415111	3951313	3951313	3399913221	3053524	3053531 pt
339920912K	3949595	3949595	3399415116	3951325	3951325	3399913331	3053517	3053517
339920912P	3949597	3949597	3399415YVW	3951300	3951300	3399913341	3053519	3053519
339920912U pt	3949599 pt	3949589				3399913351 pt	3053529 pt	3053511
339920912U pt	3949599 pt	3949599	339941W	39510	39510	3399913351 pt	3053529 pt	3053513
3399209131	3949537	3949537	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053521
3399209136	3949538	3949538	339941WYVW	3951002	3951002	3399913351 pt	3053529 pt	3053531 pt
						3399913YVW	3053500	3053500
3399209141	3949539	3949539	3399421 pt	25311 pt	25311 pt			
3399209146	3949541	3949541	3399421 pt	39523	39523	3399915	30536	30536
3399209151	3949551	3949551	3399421101	3952310	3952310	3399915111	3053621	3053621
3399209156 pt	3949561 pt	3949564	3399421106	3952313	3952313	3399915221	3053622	3053622
3399209156 pt	3949561 pt	3949586	3399421111	3952322	3952322	3399915231	3053625	3053625
3399209161	3949591	3949591	3399421316	2531191 pt	2531198 pt	3399915241	3053626	3053626
3399209166	3949585	3949585	3399421YVW pt	2531100 pt	2531100 pt	3399915251	3053630	3053630
3399209171	3949572	3949553 pt	3399421YVW pt	3952300	3952300	3399915261	3053635	3053635
3399209176	3949574	3949553 pt				3399915YVW	3053600	3053600
3399209181	3949576	3949553 pt	3399423	39524 pt	39524 pt			
			3399423101	3952414	3952413 pt	3399917	30537	30537
3399209186	3949556	3949556	3399423206	3952421	3952419 pt	3399917111	3053729	3053729
3399209191	3949571	3949571 pt	3399423YVW	3952400 pt	3952400 pt	3399917121	3053748	3053748
3399209193	3949565	3949571 pt				3399917YVW	3053700	3053700
3399209196	3949570	3949570						
3399209YVW	3949500	3949500	3399425	35799 pt	35799 pt			
			3399425000 pt	3579900 pt	3579900 pt	3399918	30538	30538
			3399425000 pt	3579930	3579900 pt	3399918111	3053810	3053810
						3399918121	3053813	3053813
339920W	39490	39490	339942W pt	25310 pt	25310 pt	3399918131	3053815	3053815
339920WYVW	3949000	3949000	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
339920WYVW	3949002	3949002				3399918251	3053817	3053817
			339942W pt	39520 pt	39520 pt	3399918YVW	3053800	3053800
3399310	39420	39420	339942W pt	2531000 pt	2531000 pt			
3399310106	3942012	3942012	339942WYVW pt	3579000 pt	3579000 pt	3399919	30539	30539
3399310111	3942021	3942021	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310131	3942056	3942056	339942WYVW pt	3579000 pt	3579000 pt	3399919121	3053973	3053973
3399310216	3942043	3942043	339942WYVW pt	2531002 pt	2531002 pt	3399919131	3053975	3053975
3399310301	3942008	3942008	339942WYVW pt	3579002 pt	3579002 pt	3399919141	3053977	3053977
3399310321	3942053	3942053	339942WYVW pt	3952002 pt	3952002 pt	3399919151 pt	3053989 pt	3053979
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3399323236	3944429	3944429	3399443100	3955200	3955200			
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3399323256	3944439	394443						

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Lead Pencil and Art Goods Manufacturing

1997

Issued July 1999

EC97M-3399I

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Lead Pencil and Art Goods Manufacturing

1997

Issued July 1999

EC97M-3399I

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339942	Lead pencil & art good mfg	169	172	7 966	194 422	6 189	12 402	119 168	796 737	426 144	1 228 709	28 714
253130	Public building & related furniture (pt)	N	17	941	27 255	665	1 411	14 041	59 858	51 192	110 985	1 323
357930	Office machines, n.e.c. (pt)	N	12	1 210	29 408	846	1 992	17 675	154 483	82 640	251 273	8 821
395230	Lead pencils & art goods (pt)	N	143	5 815	137 759	4 678	8 999	87 452	582 396	292 312	866 451	18 570

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339942, LEAD PENCIL & ART GOOD MFG												
United States	1	172	52	7 966	194 422	6 189	12 402	119 168	796 737	426 144	1 228 709	28 714
Georgia	4	6	3	394	8 746	308	1 070	5 140	25 757	22 293	48 563	1 131
Massachusetts	2	11	1	127	3 312	68	133	1 262	8 430	6 342	14 523	735
Michigan	1	5	3	162	4 146	92	196	1 476	9 066	6 863	15 844	264
New Jersey	2	12	6	610	20 312	363	684	8 489	52 864	32 342	84 960	2 560
New York	-	14	4	878	16 899	632	1 632	9 496	70 484	48 376	122 446	4 813
Ohio	-	7	2	256	5 543	193	344	3 631	14 963	9 306	24 599	368
Tennessee	-	7	6	1 175	28 880	1 014	1 734	20 140	118 065	48 634	163 629	2 979

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339942, LEAD PENCIL & ART GOOD MFG		339942, LEAD PENCIL & ART GOOD MFG—Con.	
Companies ¹	number.. 169	Value added	\$1,000.. 796 737
All establishments	number.. 172	Total inventories, beginning of year	\$1,000.. 222 882
Establishments with 1 to 19 employees	number.. 120	Finished goods inventories, beginning of year	\$1,000.. 102 931
Establishments with 20 to 99 employees	number.. 34	Work-in-process inventories, beginning of year	\$1,000.. 48 955
Establishments with 100 employees or more	number.. 18	Materials and supplies inventories, beginning of year	\$1,000.. 70 996
All employees	number.. 7 966	Total inventories, end of year	\$1,000.. 218 568
Total compensation ²	\$1,000.. 248 604	Finished goods inventories, end of year	\$1,000.. 99 035
Annual payroll	\$1,000.. 194 422	Work-in-process inventories, end of year	\$1,000.. 47 023
Total fringe benefits	\$1,000.. 54 182	Materials and supplies inventories, end of year	\$1,000.. 72 510
Production workers, average for year	number.. 6 189	Gross book value of total assets at beginning of year	\$1,000.. 276 585
Production workers on March 15	number.. 5 933	Total capital expenditures (new and used)	\$1,000.. 28 714
Production workers on May 15	number.. 6 723	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 4 244
Production workers on August 15	number.. 6 480	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 24 471
Production workers on November 15	number.. 5 620	Total retirements ²	\$1,000.. 16 870
Production-worker hours	1,000.. 12 402	Gross book value of total assets at end of year	\$1,000.. 288 429
Production-worker wages	\$1,000.. 119 168	Total depreciation during year ²	\$1,000.. 22 644
Total cost of materials	\$1,000.. 426 144	Total rental payments ²	\$1,000.. 9 098
Cost of materials, parts, containers, etc., consumed	\$1,000.. 382 247	Buildings and other structures rental payments ²	\$1,000.. 5 472
Cost of resales	\$1,000.. 28 887	Machinery and equipment rental payments ²	\$1,000.. 3 621
Cost of fuels	\$1,000.. 2 471	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 1 778
Cost of purchased electricity	\$1,000.. 8 960	Response coverage ratio ⁴	percent.. 77
Cost of contract work	\$1,000.. 3 579	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 2 550
Quantity of electricity purchased for heat and power	1,000 kWh.. 139 092	Response coverage ratio ⁴	percent.. 77
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Cost of purchased communications services ³	\$1,000.. 1 561
Total value of shipments	\$1,000.. 1 228 709	Response coverage ratio ⁴	percent.. 77
Primary products value of shipments	\$1,000.. 880 146	Cost of purchased legal services ³	\$1,000.. 2 104
Secondary products value of shipments	\$1,000.. 309 932	Response coverage ratio ⁴	percent.. 77
Total miscellaneous receipts	\$1,000.. 38 631	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 571
Value of resales	\$1,000.. 35 866	Response coverage ratio ⁴	percent.. 77
Contract receipts	\$1,000.. 1 723	Cost of purchased advertising services ³	\$1,000.. 4 477
Other miscellaneous receipts	\$1,000.. 1 042	Response coverage ratio ⁴	percent.. 77
Primary products specialization ratio	percent.. 73	Cost of purchased software and other data processing services ³	\$1,000.. 1 450
Value of primary products shipments made in all industries	\$1,000.. 1 082 421	Response coverage ratio ⁴	percent.. 77
Value of primary products shipments made in this industry	\$1,000.. 880 146	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 841
Value of primary products shipments made in other industries	\$1,000.. 202 275	Response coverage ratio ⁴	percent.. 77
Coverage ratio	percent.. 81		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339942, LEAD PENCIL & ART GOOD MFG												
All establishments	1	172	52	7 966	194 422	6 189	12 402	119 168	796 737	426 144	1 228 709	28 714
Establishments with 1 to 4 employees	8	74	—	151	3 698	122	200	2 426	11 729	6 586	18 434	585
Establishments with 5 to 9 employees	7	19	—	125	2 543	86	149	1 608	7 406	4 599	12 071	348
Establishments with 10 to 19 employees	4	27	—	362	9 772	262	501	5 073	25 915	16 794	43 340	1 008
Establishments with 20 to 49 employees	3	20	20	591	14 846	421	765	7 427	33 860	28 175	62 238	1 105
Establishments with 50 to 99 employees	2	14	14	919	24 953	543	1 114	10 743	79 841	46 628	125 220	4 167
Establishments with 100 to 249 employees	1	9	9	1 307	33 784	990	1 888	18 969	91 864	79 536	172 581	3 129
Establishments with 250 to 499 employees	—	5	5	1 753	42 386	1 282	3 419	21 993	122 559	83 312	209 386	5 726
Establishments with 500 to 999 employees	—	3	3	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	59	—	233	4 648	169	254	2 844	12 930	9 982	23 021	707

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339942	Lead pencil & art good mfg	172	7 966	194 422	6 189	12 402	119 168	796 737	426 144	1 228 709	28 714
3399421	Blackboards	26	4 351	100 897	3 725	6 898	70 471	490 240	227 943	709 073	11 753
3399423	Artists' equipment	37	1 600	45 841	1 021	2 444	19 656	99 720	76 139	176 548	4 988
3399425	Lead pencils and art goods	5	1 172	28 137	826	1 960	17 185	151 021	80 270	245 334	8 610

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339942	Lead pencils and art goods	N	X	X	1 082 421	N	X	X	N
3399421	Blackboards	N	X	X	498 121	N	X	X	N
33994211	Nonmechanical wood-cased pencils, indelible, colored, etc., and graphite and colored sticks	N	X	X	257 991	N	X	X	N
3399421101	Nonmechanical (wood-cased) black graphite pencils	12	X	X	176 020	12	X	X	158 208
3399421106	Other nonmechanical (wood-cased) pencils (indelible, colored, etc.) and graphite and colored sticks	6	X	X	81 971	6	X	X	18 699
33994212	Crayons and chalk, except artists', including tailors' chalk	N	X	X	166 228	N	X	X	N
3399421211	Crayons and chalk, except artists', including tailors' chalk	10	X	X	166 228	8	X	X	168 690
33994213	Blackboards	N	X	X	66 606	N	X	X	N
3399421316	Blackboards	9	X	X	66 606	N	X	X	N
3399421Y	Nonmechanical pencils, crayons, and chalk, nsk	N	X	X	7 296	N	X	X	N
3399421YVV	Nonmechanical pencils, crayons, and chalk, nsk	N	X	X	7 296	N	X	X	N
3399423	Artists' equipment	N	X	X	296 958	N	X	X	N
33994231	Artists' equipment (including children's school art equipment, pantographs, and pyrography goods; excluding artists' crayons and other art materials, drawing and drafting tables and boards)	N	X	X	60 379	N	X	X	N
3399423101	Artists' equipment (including children's school art equipment, pantographs, and pyrography goods; excluding artists' crayons and other art materials, drawing and drafting tables and boards)	26	X	X	60 379	N	X	X	N
33994232	Other art materials (including modeling clay, other modeling material, chalk, watercolors, tempera colors, fingerpaint, block printing ink, etc), excluding drawing and india ink	N	X	X	236 579	N	X	X	N
3399423206	Other art materials (including modeling clay, other modeling material, chalk, watercolors, tempera colors, fingerpaint, block printing ink, etc), excluding drawing and india ink	37	X	X	236 579	N	X	X	N
3399423Y	Artists' equipment, nsk	N	X	X	-	N	X	X	N
3399423YVV	Artists' equipment, nsk	N	X	X	-	N	X	X	N
3399425	Lead pencil and art goods manufacturing, nec	N	X	X	192 819	N	X	X	N
33994250	Lead pencil and art goods manufacturing, nec	N	X	X	192 819	N	X	X	N
3399425000	Lead pencil and art goods manufacturing, nec	5	X	X	192 819	N	X	X	N
339942W	Lead pencils and art goods, nsk	N	X	X	94 523	N	X	X	N
339942WY	Lead pencil and art goods manufacturing, nsk	N	X	X	94 523	N	X	X	N
339942WYWW	Lead pencil and art goods manufacturing, nsk, for nonadministrative-record establishments	N	X	X	72 390	N	X	X	N
339942WYWY	Lead pencil and art goods manufacturing, nsk, for administrative-record establishments	N	X	X	22 133	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399421	BLACKBOARDS		
	United States	498 121	N
	Tennessee	193 355	N
3399423	ARTISTS' EQUIPMENT		
	United States	296 958	N
	California	9 041	N
	Illinois	34 793	N
	Massachusetts	9 910	N
	Michigan	10 562	N
	New Jersey	51 594	N
	New York	18 863	N
	Pennsylvania	40 832	N
3399425	LEAD PENCIL AND ART GOODS MANUFACTURING, NEC		
	United States	192 819	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339942	LEAD PENCIL & ART GOOD MFG				
33120017	Steel sheet and strip, including tin plate	X	6 983	X	N
33100055	All other aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	8 239	X	N
32100025	Hardwood lumber, rough and dressed	X	409	X	N
32100031	Softwood lumber, rough and dressed	X	655	X	N
32121903	Particleboard (wood)	X	1 345	X	N
32121907	Medium density fiberboard (MDF)	X	D	X	N
32121909	Hardboard	X	1 232	X	N
31321019	Uncoated broadwoven fabrics for upholstery	X	D	X	N
32721101	Flat glass (plate, float, and sheet)	X	415	X	N
32552001	Adhesives and sealants	X	704	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	4 037	X	N
33251001	Furniture and builders' hardware, including cabinet hardware, casters, glides, handles, hinges, locks, etc.	X	382	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	39 414	X	N
32100001	Lumber and wood products, except furniture	X	40 661	X	N
32513005	Pigments, lakes, and toners; organic and inorganic	X	28 451	X	N
32500059	Other chemicals and allied products	X	30 357	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	36 525	X	N
32700001	Stone, clay, glass, and concrete products	X	6 282	X	N
33200005	Fabricated metal products, including forgings	X	11 835	X	N
33994100	Parts for pens and mechanical pencils	X	4 796	X	N
00970099	All other materials and components, parts, containers, and supplies	X	110 512	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	48 787	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339942 LEAD PENCIL AND ART GOODS MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing nonmechanical pencils, and art goods. Examples of products made by these establishments are pencil leads, crayons, chalk, framed blackboards, pencil sharpeners, staplers, artists' palettes and paints, and modeling clay.

The data published with NAICS code 339942 include the following SIC industries:

- 2531 Public building and related furniture (pt)
- 3579 Office machines, n.e.c. (pt)
- 3952 Lead pencils and art goods (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114W pt.	36990 pt.	36990 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114WYWW pt.	3699000 pt.	3699000 pt	3399121121	3914153	3914153
			339114WYWW pt.	3699000 pt.	3699000 pt	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWY pt.	3699002 pt.	3699002 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWY pt.	3699002 pt.	3699002 pt			
3391123111	3841293	3841293	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
3391123YWV	3841200	3841200	3391151106	3851117	3851117	3399123106	3914211	3914211
			3391151111	3851118	3851118	3399123111	3914235	3914235
339112W pt.	38290 pt.	38290 pt	3391151116	3851119	3851119	3399123116	3914241	3914241
			3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112W pt.	38410	38410				3399123126	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153	38514	38514	3399123YWV pt.	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153101	3851431	3851431	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWY pt.	3829002 pt.	3829002 pt	3391153106	3851445	3851445	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWY pt.	3841002	3841002	3391153YWV	3851400	3851400			
						339912W pt.	34790 pt.	34790 pt
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131207	3842104	3842104	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt.	3479002 pt
3391131211	3842105	3842105				339912WYWY pt.	3914002 pt.	3914002 pt
3391131214	3842106	3842106	3391157	38516	38516			
3391131217	3842107	3842107	3391157101	3851612	3851612	3399131	39152	39152
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
3391131224	3842109	3842109	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915233
3391131231	3842112	3842112	339115B	38517	38517			
			339115B101	3851702	3851702	3399133	39153	39153
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131341	3842124	3842124	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131351	3842127	3842127	339115B125	3851721	3851700 pt			
3391131354	3842129	3842129	339115B1700	3851700	3851700 pt	3399135	39154	39154
3391131457	3842131	3842131	339115W	38510	38510	3399135100	3915400	3915400
3391131567	3842137	3842137	339115WYWW	3851000	3851000			
3391131571	3842165	3842165	339115WYWY	3851002	3851002	339913W	39150	39150
						339913WYWW	3915000	3915000
3391131574	3842183	3842183				339913WYWY	3915002	3915002
3391131577	3842185	3842185	3391160	80720	80720			
3391131581	3842187	3842187	3391160100 pt.	8072001	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131584	3842189	3842189	3391160100 pt.	8072000 pt.	8072000 pt			
3391131587	3842191	3842191	3391160YWW	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWY	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131YWV	3842100 pt.	3842100 pt						
			3399111	39111	39111	3399140 pt.	39610	39610
3391135	38423	38423	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135101	3842311	3842311	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135106	3842321	3842321	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135111	3842322	3842322	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135116	3842351	3842351	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135121	3842361	3842361	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135126	3842373	3842373	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135YWV	3842300	3842300	3399111YWV	3911100	3911100	3399140221	3961072	3961072
						3399140226 pt.	3479026	3479021 pt
3391137	25991	25991	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
3391137100	2599100	2599100	3399113101	3911311	3911311			
			3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
339113W pt.	25990 pt.	25990 pt	3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113W pt.	38420 pt.	38420 pt	3399113116 pt.	3911317 pt.	3911341 pt	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113116 pt.	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWW pt.	3842000 pt.	3842000 pt	3399113YWV	3911300	3911300	3399140YWY pt.	3479002 pt.	3479002 pt
339113WYWY pt.	2599002 pt.	2599002 pt				3399140YWY pt.	3499002 pt.	3499002 pt
339113WYWY pt.	3842002 pt.	3842002 pt				3399140YWY pt.	3961002	3961002
			3399115 pt.	34790 pt.	34790 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399325	39445	39445	3399503	39932	39932
3399201YVW	3949100	3949100	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203	39492	39492	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203101	3949231	3949231	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203206	3949241	3949241	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203311	3949245	3949245	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203416	3949247	3949247	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325236	3944530	3944530	3399503111 pt	3993205 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301	3399327	39446	39446	3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993278 pt
3399205YVW	3949300	3949300	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207	39494	39494	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993252 pt
3399207101	3949401	3949401	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993272 pt
3399207111	3949411	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993207 pt	3993276 pt
3399207121	3949421	3949406 pt	3399327221	3944695	3944695	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949402 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949403 pt	3399327YVW	3944600	3944600	3399503121 pt	3993209 pt	3993278 pt
3399207131 pt	3949431 pt	3949406 pt	3399329	39447	39447	3399503126 pt	3993211 pt	3993252 pt
3399207141	3949441	3949406 pt	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993272 pt
3399207151	3949451	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949404 pt	3399329100 pt	3944718 pt	3944714	3399503126 pt	3993211 pt	3993288 pt
3399207199 pt	3949499 pt	3949405 pt	3399329100 pt	3944718 pt	3944716	3399503YVW	3993200	3993200
3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944716	3399505	39933	39933
3399207YVW	3949400	3949400	339932W	39440 pt	39440 pt	33995050101	3993311	3993300 pt
3399209	39495	39495	339932WYVW	3944000 pt	3944000 pt	3399505106	3993351	3993300 pt
3399209101	3949511	3949511	339932WYVW	3944002 pt	3944002 pt	3399505YVW	3993300	3993300 pt
3399209106	3949515	3949515	3399411	39511	39511	339950W	39930	39930
3399209111	3949527	3949527	3399411101	3951102	3951102	339950WYVW	3993000	3993000
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993002	3993002
339920911A	3949569	3949569	3399411311	3951113	3951113	3399911	30534	30534
339920911F	3949575	3949575	3399411YVW	3951100	3951100	3399911111	3053415	3053415
339920911K	3949577	3949577	3399413	39512	39512	3399911121 pt	3053419 pt	3053411
339920911P	3949581	3949593 pt	3399413101	3951202	3951202	3399911121 pt	3053419 pt	3053418
339920911U	3949592	3949592	3399413206	3951206	3951206	3399911YVW	3053400	3053400
339920911Y	3949583	3949593 pt	3399413YVW	3951200	3951200	3399913	30535	30535
3399209121	3949530	3949530	3399415	39513	39513	3399913111	3053515	3053515
3399209126	3949536	3949536	3399415101	3951305	3951305	3399913221	3053524	3053531 pt
339920912A	3949596	3949596	3399415106	3951310	3951310	3399913331	3053517	3053517
339920912F	3949594	3949594	3399415111	3951313	3951313	3399913341	3053519	3053519
339920912K	3949595	3949595	3399415116	3951325	3951325	3399913351 pt	3053529 pt	3053511
339920912P	3949597	3949597	3399415YVW	3951300	3951300	3399913351 pt	3053529 pt	3053513
339920912U pt	3949599 pt	3949599	339941W	39510	39510	3399913351 pt	3053529 pt	3053521
339920912U pt	3949599 pt	3949599	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053531
3399209131	3949537	3949537	339941WYVW	3951002	3951002	3399913YVW	3053500	3053500
3399209136	3949538	3949538	3399421 pt	25311 pt	25311 pt	3399915	30536	30536
3399209141	3949539	3949539	3399421 pt	25311 pt	25311 pt	3399915111	3053621	3053621
3399209146	3949541	3949541	3399421101	3952310	3952310	3399915221	3053622	3053622
3399209151	3949551	3949551	3399421106	3952313	3952313	3399915231	3053625	3053625
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Marking Device Manufacturing

1997

Issued September 1999

EC97M-3399J

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Marking Device Manufacturing

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EC97M-3399J

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339943	Marking device mfg	619	634	7 831	185 316	4 696	9 381	102 830	411 111	235 301	642 978	20 144
395300	Marking devices	N	634	7 831	185 316	4 696	9 381	102 830	411 111	235 301	642 978	20 144

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339943, MARKING DEVICE MFG												
United States	2	634	75	7 831	185 316	4 696	9 381	102 830	411 111	235 301	642 978	20 144
Arizona	2	11	1	118	1 837	90	131	1 218	4 191	2 389	6 507	197
California	1	89	16	1 465	32 782	962	2 015	18 944	78 178	34 851	112 509	2 266
Colorado	1	14	2	148	3 046	84	182	2 118	6 412	2 280	8 610	353
Illinois	2	52	5	520	11 628	340	663	7 359	32 038	16 359	47 057	1 726
Missouri	-	14	2	453	12 261	98	197	2 322	16 590	43 205	60 151	856
New Jersey	1	23	4	324	8 509	215	422	4 451	21 746	17 082	38 407	1 483
New York	3	36	2	280	6 004	182	349	3 920	12 406	6 652	18 998	496
Ohio	4	28	4	380	9 118	248	449	5 513	19 078	9 141	27 995	1 113
Tennessee	1	14	3	556	12 619	343	720	8 377	33 109	15 511	48 449	567
Texas	4	44	4	408	7 906	229	433	4 635	15 241	7 838	23 007	721
Washington	1	22	5	337	7 119	231	376	4 076	16 247	8 810	25 095	762
Wisconsin	-	13	3	422	14 695	126	306	4 683	21 015	4 681	25 677	549

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339943, MARKING DEVICE MFG		339943, MARKING DEVICE MFG—Con.	
Companies ¹	number.. 619	Value added	\$.1,000.. 411 111
All establishments	number.. 634	Total inventories, beginning of year	\$.1,000.. 73 550
Establishments with 1 to 19 employees	number.. 559	Finished goods inventories, beginning of year	\$.1,000.. 32 511
Establishments with 20 to 99 employees	number.. 65	Work-in-process inventories, beginning of year	\$.1,000.. 5 916
Establishments with 100 employees or more	number.. 10	Materials and supplies inventories, beginning of year	\$.1,000.. 35 123
All employees	number.. 7 831	Total inventories, end of year	\$.1,000.. 76 824
Total compensation ²	\$.1,000.. 219 180	Finished goods inventories, end of year	\$.1,000.. 33 433
Annual payroll	\$.1,000.. 185 316	Work-in-process inventories, end of year	\$.1,000.. 8 428
Total fringe benefits	\$.1,000.. 33 864	Materials and supplies inventories, end of year	\$.1,000.. 34 963
Production workers, average for year	number.. 4 696	Gross book value of total assets at beginning of year	\$.1,000.. 142 458
Production workers on March 12	number.. 4 719	Total capital expenditures (new and used)	\$.1,000.. 20 144
Production workers on May 12	number.. 4 749	Capital expenditures for buildings and other structures (new and used)	\$.1,000.. 3 115
Production workers on August 12	number.. 4 640	Capital expenditures for machinery and equipment (new and used)	\$.1,000.. 17 029
Production workers on November 12	number.. 4 676	Total retirements ²	\$.1,000.. 4 547
Production-worker hours	1,000.. 9 381	Gross book value of total assets at end of year	\$.1,000.. 158 055
Production-worker wages	\$.1,000.. 102 830	Total depreciation during year ²	\$.1,000.. 12 819
Total cost of materials	\$.1,000.. 235 301	Total rental payments ²	\$.1,000.. 13 741
Cost of materials, parts, containers, etc., consumed	\$.1,000.. 185 502	Buildings and other structures rental payments ²	\$.1,000.. 6 045
Cost of resales	\$.1,000.. 37 617	Machinery and equipment rental payments ²	\$.1,000.. 7 696
Cost of fuels	\$.1,000.. 1 464	Cost of purchased services for the repair of buildings and other structures ³	\$.1,000.. 94
Cost of purchased electricity	\$.1,000.. 4 787	Response coverage ratio ⁴	percent.. 41
Cost of contract work	\$.1,000.. 5 931	Cost of purchased services for the repair of machinery and equipment ³	\$.1,000.. 131
Quantity of electricity purchased for heat and power	1,000 kWh.. 70 700	Response coverage ratio ⁴	percent.. 41
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$.1,000.. 428
Total value of shipments	\$.1,000.. 642 978	Response coverage ratio ⁴	percent.. 41
Primary products value of shipments	\$.1,000.. 527 600	Cost of purchased legal services ³	\$.1,000.. 224
Secondary products value of shipments	\$.1,000.. 49 852	Response coverage ratio ⁴	percent.. 41
Total miscellaneous receipts	\$.1,000.. 65 526	Cost of purchased accounting and bookkeeping services ³	\$.1,000.. 198
Value of resales	\$.1,000.. 56 919	Response coverage ratio ⁴	percent.. 41
Contract receipts	\$.1,000.. 5 290	Cost of purchased advertising services ³	\$.1,000.. 832
Other miscellaneous receipts	\$.1,000.. 3 317	Response coverage ratio ⁴	percent.. 41
Primary products specialization ratio	percent.. 91	Cost of purchased software and other data processing services ³	\$.1,000.. 27
Value of primary products shipments made in all industries	\$.1,000.. 619 218	Response coverage ratio ⁴	percent.. 41
Value of primary products shipments made in this industry	\$.1,000.. 527 600	Cost of purchased refuse removal (including hazardous waste) services ³	\$.1,000.. 22
Value of primary products shipments made in other industries	\$.1,000.. 91 618	Response coverage ratio ⁴	percent.. 41
Coverage ratio	percent.. 85		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339943, MARKING DEVICE MFG												
All establishments	2	634	75	7 831	185 316	4 696	9 381	102 830	411 111	235 301	642 978	20 144
Establishments with 1 to 4 employees	8	317	—	664	11 945	486	931	9 822	25 337	12 875	37 984	1 480
Establishments with 5 to 9 employees	5	149	—	985	20 402	627	1 281	14 606	43 297	21 249	64 267	2 119
Establishments with 10 to 19 employees	3	93	—	1 245	29 688	759	1 502	18 561	55 939	29 098	84 727	2 203
Establishments with 20 to 49 employees	1	46	46	1 378	37 376	895	1 692	19 771	78 012	33 613	111 687	4 721
Establishments with 50 to 99 employees	1	19	19	1 357	29 889	847	1 583	16 573	74 234	37 099	109 582	4 303
Establishments with 100 to 249 employees	—	6	6	881	19 049	525	1 096	9 813	64 716	39 609	103 411	4 227
Establishments with 250 to 499 employees	—	4	4	1 321	36 967	557	1 296	13 684	69 576	61 758	131 320	1 091
Establishments with 500 to 999 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	332	—	978	15 339	671	1 291	13 193	32 138	16 721	48 601	2 145

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339943	Marking device mfg	634	7 831	185 316	4 696	9 381	102 830	411 111	235 301	642 978	20 144

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339943	Marking devices	N	X	X	619 218	N	X	X	601 866
3399430	Hand stamps, stencils, and other marking devices	N	X	X	619 218	N	X	X	601 866
33994301	Rubber and vinyl hand and permanently inked stamps	N	X	X	151 351	N	X	X	N
3399430101	Rubber and vinyl hand stamps, typeholder, and dies, custom and stock	117	X	X	100 508	139	X	X	92 502
3399430106	Rubber and vinyl permanently inked stamps, excluding print dies	47	X	X	50 843	59	X	X	32 552
33994302	Mechanical hand stamps, self inkers including daters, time and numbering stamps, and metal and rubber wheel band goods	N	X	X	91 667	N	X	X	N
3399430211	Mechanical hand stamps, self inkers including daters, time and numbering stamps, and metal and rubber wheel band goods	58	X	X	91 667	72	X	X	149 110
33994303	Other marking devices, such as stencils, letters, figures, numerals, stamp pads, branding irons, etc	N	X	X	244 227	N	X	X	N
3399430316	Embossing seals, including notary, engineering, corporate, stationery, etc	11	X	X	9 766	24	X	X	12 171
3399430321	Hand, letter, and figure stamps, dies, types and type holders, and steel embossing and incising numbering heads	28	X	X	68 931	42	X	X	55 279
3399430326	Other marking devices, such as stencils, letters, figures, numerals, stamp pads, branding irons, etc	68	X	X	165 530	57	X	X	136 782
3399430Y	Marking devices, nsk	N	X	X	131 973	N	X	X	N
3399430YWW	Marking devices, nsk, for nonadministrative-record establishments	N	X	X	89 460	N	X	X	84 185
3399430YWY	Marking devices, nsk, for administrative-record establishments	N	X	X	42 513	N	X	X	39 285

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339943	MARKING DEVICE MFG				
32100001	Lumber and wood products, except furniture	X	15 447	X	2 056
32221001	Paperboard containers, boxes, and corrugated paperboard	X	14 185	X	1 118
32513005	Pigments, lakes, and toners; organic and inorganic	X	D	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	2 088	X	D
32500059	Other chemicals and allied products	X	1 999	X	1 522
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	25 450	X	9 217
32700001	Stone, clay, glass, and concrete products	X	D	X	N
33200005	Fabricated metal products, including forgings	X	26 657	X	9 813
33994100	Parts for pens and mechanical pencils	X	D	X	D
00970099	All other materials and components, parts, containers, and supplies	X	66 524	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	23 672	X	56 886

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339943 MARKING DEVICE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing marking devices, such as hand operated stamps, embossing stamps, stamp pads, and stencils.

The data published with NAICS code 339943 include the following SIC industry:

3953 Marking devices

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114W pt.	36990 pt.	36990 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114WYWW pt.	3699000 pt.	3699000 pt	3399121121	3914153	3914153
			339114WYWW pt.	3699000 pt.	3699000 pt	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWY pt.	3699002 pt.	3699002 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWY pt.	3699002 pt.	3699002 pt			
3391123111	3841293	3841293	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
3391123YWV	3841200	3841200	3391151106	3851117	3851117	3399123106	3914211	3914211
			3391151111	3851118	3851118	3399123111	3914235	3914235
339112W pt.	38290 pt.	38290 pt	3391151116	3851119	3851119	3399123116	3914241	3914241
			3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112W pt.	38410	38410				3399123126	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153	38514	38514	3399123YWV pt.	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153101	3851431	3851431	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWY pt.	3829002 pt.	3829002 pt	3391153106	3851445	3851445	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWY pt.	3841002	3841002	3391153YWV	3851400	3851400			
						339912W pt.	34790 pt.	34790 pt
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131207	3842104	3842104	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt.	3479002 pt
3391131211	3842105	3842105				339912WYWY pt.	3914002 pt.	3914002 pt
3391131214	3842106	3842106	3391157	38516	38516			
3391131217	3842107	3842107	3391157101	3851612	3851612	3399131	39152	39152
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
3391131224	3842109	3842109	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915233
3391131231	3842112	3842112	339115B	38517	38517			
			339115B101	3851702	3851702	3399133	39153	39153
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt			
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135	39154	39154
3391131571	3842165	3842165				3399135100	3915400	3915400
			339115W	38510	38510	339913W	39150	39150
3391131574	3842183	3842183	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131577	3842185	3842185	339115WYWY	3851002	3851002	339913WYWY	3915002	3915002
3391131581	3842187	3842187						
3391131584	3842189	3842189	3391160	80720	80720	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160100 pt.	8072001	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131594	3842198	3842198	3391160YWW	8072000 pt.	8072000 pt			
3391131YWV	3842100 pt.	3842100 pt	3391160YWY	8072002	8072000 pt	3399140 pt.	34998 pt.	34998 pt
3391135	38423	38423	3399111	39111	39111	3399140 pt.	39610	39610
3391135101	3842311	3842311	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135121	3842361	3842361	3399111526	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135126	3842373	3842373	3399111531	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135YWV	3842300	3842300	3399111537	3911198	3911198	3399140216	3961051	3961051
			3399111YWV	3911100	3911100	3399140221	3961072	3961072
3391137	25991	25991				3399140226 pt.	3479026	3479021 pt
3391137100	2599100	2599100	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
			3399113101	3911311	3911311			
339113W pt.	25990 pt.	25990 pt	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
			3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	38420 pt.	38420 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113111 pt.	3911317 pt.	3911331 pt	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	3842000 pt.	3842000 pt	3399113116	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWY pt.	2599002 pt.	2599002 pt	3399113YWV	3911300	3911300	3399140YWY pt.	3479002 pt.	3479002 pt
339113WYWY pt.	3842002 pt.	3842002 pt				3399140YWY pt.	3499002 pt.	3499002 pt
			3399115 pt.	34790 pt.	34790 pt	3399140YWY pt.	3961002	3961002

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399927.....	39314.....	39314.....	3399941 pt.....	39911.....	39911.....	339995W.....	39950.....	39950.....
3399927116 pt.....	3931437 pt.....	3931450.....	3399941101.....	3991113.....	3991113.....	339995WYWWW.....	3995000.....	3995000.....
3399927116 pt.....	3931437 pt.....	3931452.....	3399941106.....	3991198.....	3991198.....	339995WYWY.....	3995002.....	3995002.....
3399927201.....	3931413.....	3931413.....	3399941311.....	2392471.....	2392471.....			
3399927206.....	3931415.....	3931415.....	3399941316.....	2392473.....	2392473.....	3399991.....	39991.....	39991.....
3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
3399927221.....	3931488.....	3931488.....	3399941YVW pt.....	2392400 pt.....	2392400 pt.....	3399991106.....	3999117.....	3999117.....
3399927226.....	3931498.....	3931498.....	3399941YVW pt.....	3991100.....	3991100.....	3399991111.....	3999140.....	3999140.....
3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
3399927YVW.....	3931400.....	3931400.....	3399943.....	39912.....	39912.....	3399991121.....	3999171.....	3999171.....
			3399943101 pt.....	3991251 pt.....	3991211.....	3399991YVW.....	3999100.....	3999100.....
339992W.....	39310.....	39310.....	3399943101 pt.....	3991251 pt.....	3991233.....			
339992WYWWW.....	3931000.....	3931000.....	3399943206.....	3991243.....	3991243.....	3399993.....	39992.....	39992.....
339992WYWY.....	3931002.....	3931002.....	3399943211 pt.....	3991253 pt.....	3991281.....	3399993101.....	3999222.....	3999222.....
			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
3399931 pt.....	31310 pt.....	31310 pt.....	3399943211 pt.....	3991253 pt.....	3991285.....	3399993YVW.....	3999200.....	3999200.....
			3399943YVW.....	3991200.....	3991200.....			
3399931 pt.....	39651.....	39651.....				3399995.....	39994.....	39994.....
3399931101 pt.....	3965131 pt.....	3965101.....	3399945.....	39913.....	39913.....	3399995100.....	3999400.....	3999400.....
3399931101 pt.....	3965131 pt.....	3965109.....	3399945101.....	3991321.....	3991321.....			
3399931106 pt.....	3965133 pt.....	3965111.....	3399945106 pt.....	3991328 pt.....	3991327.....	3399997.....	39997.....	39997.....
3399931106 pt.....	3965133 pt.....	3965119.....	3399945106 pt.....	3991328 pt.....	3991329.....	3399997100.....	3999700.....	3999700.....
3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
3399931111 pt.....	3965135 pt.....	3965121.....	3399945216.....	3991338.....	3991338.....	3399999.....	39998.....	39998.....
3399931111 pt.....	3965135 pt.....	3965129.....	3399945221.....	3991343.....	3991343.....	3399999101.....	3999813.....	3999813.....
3399931YVW pt.....	3131000 pt.....	3131000 pt.....	3399945226.....	3991398.....	3991398.....	3399999106 pt.....	3999816 pt.....	3999816.....
3399933YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
						3399999YVW.....	3999800.....	3999800.....
3399933.....	39654.....	39654.....						
3399933101 pt.....	3965441 pt.....	3965422.....	339994W pt.....	23920 pt.....	23920 pt.....	339999C.....	24991 pt.....	24991 pt.....
3399933101 pt.....	3965441 pt.....	3965423.....				339999C101.....	2499111.....	2499111.....
3399933106 pt.....	3965443 pt.....	3965431.....	339994W pt.....	39910.....	39910.....	339999C206.....	2499161.....	2499161.....
3399933106 pt.....	3965443 pt.....	3965433.....	339994WYVW pt.....	2392000 pt.....	2392000 pt.....	339999C311.....	2499115.....	2499115.....
3399933106 pt.....	3965443 pt.....	3965439.....	339994WYVW pt.....	2392002 pt.....	2392002 pt.....	339999C316.....	2499171.....	2499171.....
3399933YVW.....	3965400.....	3965400.....	339994WYVW pt.....	3991002.....	3991002.....	339999CYVW.....	2499100 pt.....	2499100 pt.....
3399935.....	39656.....	39656.....				339999H.....	39999 pt.....	39999 pt.....
3399935101.....	3965620.....	3965620.....	3399951.....	39951.....	39951.....	339999H101.....	3999907.....	3999907.....
3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
3399935111.....	3965633.....	3965633.....	3399951206.....	3995115.....	3995115.....	339999H111.....	3999951.....	3999951.....
3399935116.....	3965651.....	3965651.....	3399951YVW.....	3995100.....	3995100.....	339999H121.....	3999981.....	3999981.....
3399935121.....	3965671.....	3965671.....				339999H151 pt.....	3999997 pt.....	3999913 pt.....
3399935126 pt.....	3965691 pt.....	3965681.....	3399953.....	39952.....	39952.....	339999H151 pt.....	3999997 pt.....	3999924.....
3399935126 pt.....	3965691 pt.....	3965689.....	3399953101.....	3995211.....	3995211.....	339999H151 pt.....	3999997 pt.....	3999944 pt.....
3399935YVW.....	3965600.....	3965600.....	3399953106.....	3995252.....	3995252.....	339999H151 pt.....	3999997 pt.....	3999999 pt.....
			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
339993W pt.....	31310 pt.....	31310 pt.....				339999W pt.....	24990 pt.....	24990 pt.....
			3399955.....	39953.....	39953.....			
339993W pt.....	39650.....	39650.....	3399955100 pt.....	3995300 pt.....	3995300.....	339999W pt.....	39990 pt.....	39990 pt.....
339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
339993WYWY pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYWWW pt.....	3999000 pt.....	3999000 pt.....
339993WYWY pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYWY pt.....	2499002 pt.....	2499002 pt.....
			3399955100 pt.....	3995300 pt.....	3995393.....	339999WYWY pt.....	3999002 pt.....	3999002 pt.....
3399941 pt.....	23924 pt.....	23924 pt.....						

Carbon Paper and Inked Ribbon Manufacturing

1997

Issued July 1999

EC97M-3399K

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Carbon Paper and Inked Ribbon Manufacturing

1997

Issued July 1999

EC97M-3399K

1997 Economic Census

Manufacturing

Industry Series



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Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339944	Carbon paper & inked ribbon mfg	107	119	5 923	145 323	4 332	8 318	91 316	434 956	430 444	870 223	17 322
395500	Carbon paper & inked ribbons	N	119	5 923	145 323	4 332	8 318	91 316	434 956	430 444	870 223	17 322

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339944, CARBON PAPER & INKED RIBBON MFG												
United States	-	119	49	5 923	145 323	4 332	8 318	91 316	434 956	430 444	870 223	17 322
California	-	14	6	492	10 211	367	520	6 009	26 271	35 511	61 592	2 605
Georgia	-	6	2	162	3 931	147	205	1 589	5 280	18 956	27 027	978
New Jersey	-	9	4	434	11 799	202	404	6 601	27 386	27 722	53 919	1 412
New York	-	10	5	1 097	30 813	758	1 939	19 526	81 435	52 621	133 699	1 243
Ohio	-	9	2	155	3 577	107	175	1 666	8 992	8 525	17 464	363
Pennsylvania	-	9	4	335	9 777	205	450	5 398	43 991	30 756	75 822	1 370
Texas	-	7	2	158	5 295	89	170	2 551	51 183	29 696	79 855	2 198

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339944, CARBON PAPER & INKED RIBBON MFG		339944, CARBON PAPER & INKED RIBBON MFG— Con.	
Companies ¹	number.. 107	Value added .....	..\$1,000.. 434 956
All establishments	number.. 119	Total inventories, beginning of year .....	..\$1,000.. 128 025
Establishments with 1 to 19 employees	number.. 70	Finished goods inventories, beginning of year .....	..\$1,000.. 49 516
Establishments with 20 to 99 employees	number.. 35	Work-in-process inventories, beginning of year .....	..\$1,000.. 23 427
Establishments with 100 employees or more	number.. 14	Materials and supplies inventories, beginning of year .....	..\$1,000.. 55 082
All employees	number.. 5 923	Total inventories, end of year .....	..\$1,000.. 121 649
Total compensation ² .....	..\$1,000.. 181 656	Finished goods inventories, end of year .....	..\$1,000.. 46 235
Annual payroll .....	..\$1,000.. 145 323	Work-in-process inventories, end of year .....	..\$1,000.. 21 885
Total fringe benefits .....	..\$1,000.. 36 333	Materials and supplies inventories, end of year .....	..\$1,000.. 53 529
Production workers, average for year	number.. 4 332	Gross book value of total assets at beginning of year .....	..\$1,000.. 195 209
Production workers on March 15	number.. 4 406	Total capital expenditures (new and used) .....	..\$1,000.. 17 322
Production workers on May 15	number.. 4 435	Capital expenditures for buildings and other structures (new and used) .....	..\$1,000.. 1 171
Production workers on August 15	number.. 4 300	Capital expenditures for machinery and equipment (new and used) .....	..\$1,000.. 16 151
Production workers on November 15	number.. 4 187	Total retirements ² .....	..\$1,000.. 5 534
Production-worker hours .....	..1,000.. 8 318	Gross book value of total assets at end of year .....	..\$1,000.. 206 997
Production-worker wages .....	..\$1,000.. 91 316	Total depreciation during year ² .....	..\$1,000.. 21 526
Total cost of materials .....	..\$1,000.. 430 444	Total rental payments ² .....	..\$1,000.. 8 529
Cost of materials, parts, containers, etc., consumed .....	..\$1,000.. 395 249	Buildings and other structures rental payments ² .....	..\$1,000.. 5 450
Cost of resales .....	..\$1,000.. 24 392	Machinery and equipment rental payments ² .....	..\$1,000.. 3 079
Cost of fuels .....	..\$1,000.. 3 414	Cost of purchased services for the repair of buildings and other structures ³ .....	..\$1,000.. 889
Cost of purchased electricity .....	..\$1,000.. 5 741	Response coverage ratio ⁴	percent.. 22
Cost of contract work .....	..\$1,000.. 1 648	Cost of purchased services for the repair of machinery and equipment ³ .....	..\$1,000.. 1 517
Quantity of electricity purchased for heat and power .....	..1,000 kWh.. 100 106	Response coverage ratio ⁴	percent.. 22
Quantity of electricity generated less sold for heat and power .....	..1,000 kWh.. —	Cost of purchased communications services ³ .....	..\$1,000.. 911
Total value of shipments .....	..\$1,000.. 870 223	Response coverage ratio ⁴	percent.. 22
Primary products value of shipments .....	..\$1,000.. 787 945	Cost of purchased legal services ³ .....	..\$1,000.. 54
Secondary products value of shipments .....	..\$1,000.. 45 827	Response coverage ratio ⁴	percent.. 22
Total miscellaneous receipts .....	..\$1,000.. 36 451	Cost of purchased accounting and bookkeeping services ³ .....	..\$1,000.. 148
Value of resales .....	..\$1,000.. 34 961	Response coverage ratio ⁴	percent.. 22
Contract receipts .....	..\$1,000.. 1 015	Cost of purchased advertising services ³ .....	..\$1,000.. 612
Other miscellaneous receipts .....	..\$1,000.. 475	Response coverage ratio ⁴	percent.. 22
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³ .....	..\$1,000.. 451
Value of primary products shipments made in all industries .....	..\$1,000.. 820 163	Response coverage ratio ⁴	percent.. 22
Value of primary products shipments made in this industry .....	..\$1,000.. 787 945	Cost of purchased refuse removal (including hazardous waste) services ³ .....	..\$1,000.. 578
Value of primary products shipments made in other industries .....	..\$1,000.. 32 218	Response coverage ratio ⁴	percent.. 22
Coverage ratio	percent.. 96		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339944, CARBON PAPER & INKED RIBBON MFG												
All establishments	-	119	49	5 923	145 323	4 332	8 318	91 316	434 956	430 444	870 223	17 322
Establishments with 1 to 4 employees	6	27	-	57	1 232	43	63	725	4 545	4 497	9 052	400
Establishments with 5 to 9 employees	5	17	-	118	3 068	89	143	1 829	10 077	9 882	19 875	1 034
Establishments with 10 to 19 employees	1	26	-	363	9 573	252	465	5 727	44 756	36 355	81 127	3 382
Establishments with 20 to 49 employees	-	20	20	665	14 522	503	909	8 462	33 977	43 388	77 255	2 625
Establishments with 50 to 99 employees	-	15	15	1 094	26 665	825	1 327	13 429	93 848	92 285	186 327	4 460
Establishments with 100 to 249 employees	1	9	9	1 530	37 837	945	1 871	22 935	88 798	74 406	167 552	3 631
Establishments with 250 to 499 employees	-	3	3	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	-	2	2	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	7	46	-	303	5 971	221	313	3 609	19 929	19 532	39 291	2 084

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339944	Carbon paper & inked ribbon mfg	119	5 923	145 323	4 332	8 318	91 316	434 956	430 444	870 223	17 322
3399441	Inked ribbons	53	4 509	114 266	3 328	6 641	72 591	359 959	359 065	720 513	11 594
3399443	Carbon paper, stencil paper, etc.	35	1 044	21 418	738	1 264	13 127	46 272	50 611	100 215	4 024

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339944	Carbon paper and inked ribbons.....	N	X	X	820 163	N	X	X	871 563
3399441	Inked ribbons	N	X	X	692 753	N	X	X	690 836
33994411	Inked computer (electronic data processing) ribbons	N	X	X	433 077	N	X	X	N
3399441106	Inked computer (electronic data processing) ribbons	42	X	X	433 077	53	X	X	506 681
33994412	Other inked ribbons, including typewriter	N	X	X	258 373	N	X	X	N
3399441201	Inked typewriter ribbons	20	X	X	189 653	21	X	X	123 024
3399441211	Other inked ribbons	17	X	X	68 720	17	X	X	33 791
3399441Y	Inked ribbons, nsk	N	X	X	1 303	N	X	X	N
3399441YWV	Inked ribbons, nsk	N	X	X	1 303	N	X	X	27 340
3399443	Carbon paper, stencil paper, etc	N	X	X	84 801	N	X	X	148 346
33994431	Carbon paper, stencil paper, etc	N	X	X	84 801	N	X	X	N
3399443100	Carbon paper, stencil paper, etc	28	X	X	84 801	18	X	X	148 346
339944W	Carbon paper and inked ribbons, nsk, total	N	X	X	42 609	N	X	X	32 381
339944WY	Carbon paper and inked ribbons, nsk, total	N	X	X	42 609	N	X	X	N
339944WYWW	Carbon paper and inked ribbons, nsk, for nonadministrative-record establishments	N	X	X	27 455	N	X	X	13 735
339944WYWY	Carbon paper and inked ribbons, nsk, for administrative-record establishments	N	X	X	15 154	N	X	X	18 646

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399441	INKED RIBBONS		
	United States	692 753	690 836
	California	65 461	114 554
	New York	120 588	76 255
	North Carolina	3 054	N
	Ohio	10 099	34 920
	Pennsylvania	68 442	34 051
3399443	CARBON PAPER, STENCIL PAPER, ETC		
	United States	84 801	148 346
	Georgia	9 048	N
	New York	10 971	39 176
	Ohio	5 197	N
	Texas	5 884	12 278

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339944	CARBON PAPER & INKED RIBBON MFG				
31320003	Textile fabrics	X	12 259	X	N
32212005	Purchased (market) paper	X	28 962	X	42 610
32221001	Paperboard containers, boxes, and corrugated paperboard	X	33 371	X	20 408
32200009	Other paper and allied products	X	20 096	X	D
32518200	Carbon black	X	8 188	X	2 973
32591003	Printing ink	X	9 742	X	8 378
32500057	Other chemicals and allied products	X	66 028	X	29 481
00970099	All other materials and components, parts, containers, and supplies	X	171 436	X	110 246
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	45 167	X	37 792

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B. NAICS Codes, Titles, and Descriptions

339944 CARBON PAPER AND INKED RIBBON MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing carbon paper and inked ribbons.

The data published with NAICS code 339944 include the following SIC industry:

3955 Carbon paper and inked ribbons

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt				3399121101	3914111	3914111
3391121661	3841196	3841196				3399121106	3914131	3914131
3391121766	3841199	3841199				3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100				3399121121	3914153	3914153
			339114W pt.	38430	38430	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWW pt.	3699000 pt.	3699000 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWW pt.	3843000	3843000			
3391123111	3841293	3841293	339114WYWY pt.	3699002 pt.	3699002 pt			
3391123116	3841296	3841296	339114WYWY pt.	3843002	3843002			
3391123YWV	3841200	3841200						
339112W pt.	38290 pt.	38290 pt.	3391151	38511	38511	3399123 pt.	34790 pt.	34790 pt
			3391151101	3851115	3851115	3399123101	39142 pt.	39142 pt
339112W pt.	38410	38410	3391151106	3851117	3851117	3399123106	3914211	3914211
339112WYWW pt.	3829000 pt.	3829000 pt	3391151111	3851118	3851118	3399123111	3914235	3914235
339112WYWW pt.	3841000	3841000	3391151116	3851119	3851119	3399123116	3914241	3914241
339112WYWY pt.	3829002 pt.	3829002 pt	3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112WYWY pt.	3841002	3841002				3399123126	3914275	3914270 pt
						3399123126	3479024	3479021 pt
3391131	38421 pt.	38421 pt	3391153	38514	38514	3399123YWV pt.	3479000 pt.	3479000 pt
339113101	3842101	3842101	3391153101	3851431	3851431	3399123YWV pt.	3914200 pt.	3914200 pt
339113104	3842102	3842102	3391153106	3851445	3851445			
3391131207	3842104	3842104	3391153YWV	3851400	3851400	339912W pt.	34790 pt.	34790 pt
3391131211	3842105	3842105						
3391131214	3842106	3842106	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
3391131217	3842107	3842107	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131217	3842108	3842108	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131224	3842109	3842109	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt.	3479002 pt
3391131227	3842110	3842110				339912WYWY pt.	3914002 pt.	3914002 pt
3391131231	3842112	3842112	3391157	38516	38516			
			3391157101	3851612	3851612	3399131	39152	39152
			3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
			3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
						3399131100 pt.	3915200 pt.	3915233
3391131234	3842113	3842113	339115B	38517	38517			
3391131337	3842122	3842122	339115B101	3851702	3851702	3399133	39153	39153
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131347	3842126	3842126	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131457	3842131	3842131	339115B125	3851721	3851700 pt			
3391131567	3842137	3842137	339115BYWV	3851700	3851700 pt	3399135	39154	39154
3391131571	3842165	3842165				3399135100	3915400	3915400
3391131574	3842183	3842183	339115W	38510	38510	339913W	39150	39150
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1997

Issued September 1999

EC97M-3399L

1997 Economic Census

Manufacturing

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

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Issued September 1999

EC97M-3399L

1997 Economic Census

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339950	Sign mfg	5 559	5 690	82 246	2 367 259	53 516	102 371	1 197 419	4 551 551	3 314 770	7 856 639	234 572
399300	Signs & advertising displays ...	N	5 690	82 246	2 367 259	53 516	102 371	1 197 419	4 551 551	3 314 770	7 856 639	234 572

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339950, SIGN MFG												
United States	2	5 690	928	82 246	2 367 259	53 516	102 371	1 197 419	4 551 551	3 314 770	7 856 639	234 572
Alabama	2	73	13	1 595	39 366	1 147	2 327	21 199	64 437	75 405	135 066	5 727
Arizona	-	114	13	1 313	40 009	730	1 426	16 668	64 281	64 281	135 624	4 198
Arkansas	-	48	9	649	13 794	438	817	6 944	32 265	26 892	58 821	1 408
California	2	580	85	6 848	205 141	4 421	8 196	99 012	409 011	230 400	645 143	13 006
Colorado	2	129	14	1 062	30 431	686	1 292	15 250	51 270	29 156	79 639	2 306
Connecticut	5	81	6	1 071	35 814	538	1 190	19 010	78 563	47 853	124 014	7 774
Florida	3	366	35	3 412	86 177	2 252	4 108	43 186	169 151	119 278	285 717	7 698
Georgia	3	150	19	1 728	50 452	1 087	2 009	23 467	98 978	62 080	160 730	3 702
Hawaii *	5	26	2	142	3 413	96	179	1 780	6 377	4 633	10 994	222
Idaho	1	37	5	342	9 615	200	369	4 621	15 557	8 061	23 602	914
Illinois	1	260	64	5 254	180 186	3 357	6 592	83 130	347 635	292 613	631 772	14 393
Indiana	2	131	17	1 350	35 712	849	1 516	16 736	72 625	47 700	121 658	3 217
Iowa	3	49	12	695	19 388	361	734	7 852	33 562	29 520	64 902	1 515
Kansas	3	61	14	1 226	29 039	902	1 725	17 299	59 544	24 966	84 680	3 167
Kentucky	1	62	10	986	24 359	698	1 288	13 966	62 832	44 518	104 194	9 069
Louisiana	2	49	7	532	12 964	341	609	6 592	24 627	17 420	41 724	1 190
Maine	1	21	3	185	5 405	120	255	2 739	8 916	5 778	14 597	1 196
Maryland	2	103	13	1 008	31 304	715	1 389	17 882	67 258	42 760	110 151	5 212
Massachusetts	1	125	18	1 347	42 559	833	1 626	21 988	78 675	57 324	136 902	2 140
Michigan	-	207	32	4 075	115 128	2 289	4 454	56 254	254 830	153 297	408 236	9 726
Minnesota	-	128	28	2 710	77 629	1 903	3 728	40 623	157 126	111 376	267 487	8 457
Mississippi	-	30	5	328	8 020	229	327	4 251	15 740	17 490	35 559	578
Missouri	2	130	31	2 679	73 294	1 672	3 160	35 759	129 874	85 588	215 644	6 497
Montana	3	21	3	138	3 701	87	149	1 932	5 333	3 764	8 909	144
Nebraska	1	37	8	326	8 822	228	421	4 799	16 367	11 704	28 130	722
Nevada	3	52	17	1 603	60 998	1 035	2 205	34 636	97 205	54 662	156 294	8 481
New Hampshire	1	24	3	239	6 965	141	290	3 120	12 476	7 821	20 154	701
New Jersey	1	193	38	3 944	127 025	2 714	5 183	59 131	260 547	195 904	452 376	10 535
New Mexico	4	28	3	266	6 332	141	240	2 781	9 729	8 169	17 894	496
New York	3	379	77	5 955	185 152	4 022	7 614	94 400	350 919	235 342	585 640	12 598
North Carolina	2	141	17	1 357	34 775	886	1 657	17 663	68 304	40 172	107 360	2 532
North Dakota	-	12	3	264	6 282	187	357	3 839	13 345	10 385	23 738	926
Ohio	1	261	59	4 636	128 376	3 148	6 332	68 227	252 014	208 204	461 345	12 290
Oklahoma	3	59	9	496	10 338	358	570	5 548	18 687	10 572	29 008	617
Oregon	2	98	13	1 231	36 329	721	1 378	16 538	73 695	49 660	122 013	4 878
Pennsylvania	2	216	36	3 591	108 128	2 468	4 721	56 074	220 145	148 634	367 627	8 867
Rhode Island	4	32	10	809	19 048	553	958	9 862	47 343	31 126	78 086	1 985
South Carolina	2	67	9	674	16 887	470	760	9 132	34 406	19 955	54 337	1 691
South Dakota	1	20	7	1 272	27 979	730	1 791	21 055	40 220	64 545	104 485	4 864
Tennessee	2	120	20	2 064	55 586	1 288	2 663	26 669	98 236	76 338	185 525	8 405
Texas	4	454	58	5 314	133 577	3 526	6 595	68 903	191 968	230 320	418 861	9 009
Utah	1	52	5	741	19 114	500	985	10 782	35 846	17 610	52 663	3 323
Vermont	2	18	4	248	6 963	156	262	3 678	13 517	7 276	19 402	598
Virginia	1	113	17	1 230	35 435	828	1 616	18 316	59 420	40 669	99 211	1 660
Washington	3	150	13	1 366	37 455	829	1 473	18 605	72 935	41 007	114 171	3 098
West Virginia	6	21	1	203	4 294	132	191	2 128	7 559	5 068	12 622	1 192
Wisconsin	-	132	39	3 506	111 123	2 337	4 309	59 217	227 884	191 039	421 843	20 444

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339950, SIGN MFG		339950, SIGN MFG—Con.	
Companies ¹	number.. 5 559	Value added	\$1,000.. 4 551 551
All establishments	number.. 5 690	Total inventories, beginning of year	\$1,000.. 774 285
Establishments with 1 to 19 employees	number.. 4 762	Finished goods inventories, beginning of year	\$1,000.. 189 679
Establishments with 20 to 99 employees	number.. 790	Work-in-process inventories, beginning of year	\$1,000.. 252 792
Establishments with 100 employees or more	number.. 138	Materials and supplies inventories, beginning of year	\$1,000.. 331 814
All employees	number.. 82 246	Total inventories, end of year	\$1,000.. 780 370
Total compensation ²	\$1,000.. 2 805 747	Finished goods inventories, end of year	\$1,000.. 185 967
Annual payroll	\$1,000.. 2 367 259	Work-in-process inventories, end of year	\$1,000.. 266 186
Total fringe benefits	\$1,000.. 438 488	Materials and supplies inventories, end of year	\$1,000.. 328 217
Production workers, average for year	number.. 53 516	Gross book value of total assets at beginning of year	\$1,000.. 1 767 747
Production workers on March 12	number.. 52 710	Total capital expenditures (new and used)	\$1,000.. 234 572
Production workers on May 12	number.. 53 240	Capital expenditures for buildings and other structures	
Production workers on August 12	number.. 53 889	(new and used)	\$1,000.. 44 099
Production workers on November 12	number.. 54 225	Capital expenditures for machinery and equipment (new	
Production-worker hours	1,000.. 102 371	and used)	\$1,000.. 190 473
Production-worker wages	\$1,000.. 1 197 419	Total retirements ²	\$1,000.. 41 190
Total cost of materials	\$1,000.. 3 314 770	Gross book value of total assets at end of year	\$1,000.. 1 961 129
Cost of materials, parts, containers, etc., consumed	\$1,000.. 2 628 051	Total depreciation during year ²	\$1,000.. 186 097
Cost of resales	\$1,000.. 226 948	Total rental payments ²	\$1,000.. 180 500
Cost of fuels	\$1,000.. 23 267	Buildings and other structures rental payments ²	\$1,000.. 98 661
Cost of purchased electricity	\$1,000.. 57 917	Machinery and equipment rental payments ²	\$1,000.. 81 839
Cost of contract work	\$1,000.. 378 587	Cost of purchased services for the repair of buildings and other	
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 105 101	structures ³	\$1,000.. 8 613
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Response coverage ratio ⁴	percent.. 65
Total value of shipments	\$1,000.. 7 856 639	Cost of purchased services for the repair of machinery and	
Primary products value of shipments	\$1,000.. 6 979 519	equipment ³	\$1,000.. 20 508
Secondary products value of shipments	\$1,000.. 189 681	Response coverage ratio ⁴	percent.. 65
Total miscellaneous receipts	\$1,000.. 687 439	Cost of purchased communications services ³	\$1,000.. 24 356
Value of resales	\$1,000.. 375 862	Response coverage ratio ⁴	percent.. 65
Contract receipts	\$1,000.. 123 927	Cost of purchased legal services ³	\$1,000.. 11 570
Other miscellaneous receipts	\$1,000.. 187 650	Response coverage ratio ⁴	percent.. 65
Primary products specialization ratio	percent.. 97	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 11 264
Value of primary products shipments made in all industries	\$1,000.. 7 112 310	Response coverage ratio ⁴	percent.. 65
Value of primary products shipments made in this industry	\$1,000.. 6 979 519	Cost of purchased advertising services ³	\$1,000.. 31 007
Value of primary products shipments made in other		Response coverage ratio ⁴	percent.. 65
industries	\$1,000.. 132 791	Cost of purchased software and other data processing	
Coverage ratio	percent.. 98	services ³	\$1,000.. 11 307
		Response coverage ratio ⁴	percent.. 65
		Cost of purchased refuse removal (including hazardous waste)	
		services ³	\$1,000.. 5 902
		Response coverage ratio ⁴	percent.. 65

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339950, SIGN MFG												
All establishments	2	5 690	928	82 246	2 367 259	53 516	102 371	1 197 419	4 551 551	3 314 770	7 856 639	234 572
Establishments with 1 to 4 employees	8	2 929	—	5 663	124 077	4 196	6 106	64 751	222 847	162 057	384 700	12 841
Establishments with 5 to 9 employees	4	1 065	—	7 021	164 929	4 690	7 874	87 694	304 902	204 179	512 284	14 777
Establishments with 10 to 19 employees	2	768	—	10 470	277 932	6 835	12 761	146 177	507 199	331 862	838 202	25 549
Establishments with 20 to 49 employees	2	556	556	16 525	517 595	10 736	21 180	259 747	929 880	695 075	1 618 140	46 682
Establishments with 50 to 99 employees	1	234	234	16 276	488 431	10 579	20 540	246 113	969 379	682 317	1 646 001	43 933
Establishments with 100 to 249 employees	1	114	114	16 481	514 523	10 604	21 606	254 684	1 051 298	826 425	1 875 082	61 704
Establishments with 250 to 499 employees	—	19	19	6 106	190 551	4 018	8 347	93 471	393 793	304 713	690 137	22 755
Establishments with 500 to 999 employees	—	5	5	3 704	89 221	1 858	3 957	44 782	172 253	108 142	292 093	6 331
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	2 927	—	7 740	156 553	5 483	7 767	81 674	273 415	196 775	470 051	13 934

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339950	Sign mfg	5 690	82 246	2 367 259	53 516	102 371	1 197 419	4 551 551	3 314 770	7 856 639	234 572
3399501	Electric signs	801	25 573	763 524	16 548	33 616	407 535	1 479 153	926 670	2 408 563	74 897
3399503	Nonelectric signs, including counter and floor displays, point-of-purchase, and other signs and displays	875	24 893	745 100	16 044	31 703	364 398	1 486 035	1 109 380	2 590 624	84 733
3399505	Advertising specialties	212	10 567	332 783	6 645	12 964	150 170	639 415	607 832	1 236 927	28 661

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339950	Signs	N	X	X	7 112 310	N	X	X	4 939 317
3399501	Electric signs	N	X	X	1 948 614	N	X	X	1 282 884
33995011	Luminous tubing electric signs (neon, argon, hydrogen, etc)	N	X	X	436 270	N	X	X	N
3399501101	Luminous tubing electric signs (neon, argon, hydrogen, etc)	416	X	X	436 270	386	X	X	350 355
33995012	Fluorescent lamp electric signs	N	X	X	513 473	N	X	X	N
3399501206	Fluorescent lamp electric signs	411	X	X	513 473	430	X	X	417 810
33995013	Incandescent bulb electric signs and other electric signs	N	X	X	946 384	N	X	X	N
3399501311	Incandescent bulb, electronic variable message display signs	89	X	X	114 318	67	X	X	60 276
3399501316	Other incandescent bulb signs	45	X	X	76 621	54	X	X	71 779
3399501321	All other electric signs (including combinations of luminous fluorescent and incandescent)	299	X	X	755 445	159	X	X	246 795
3399501Y	Electric signs, nsk	N	X	X	52 487	N	X	X	N
3399501YWV	Electric signs, nsk	N	X	X	52 487	N	X	X	135 869
3399503	Nonelectric signs, including counter and floor displays, point-of-purchase, and other signs and displays	N	X	X	2 368 732	N	X	X	1 793 306
33995031	Nonelectric signs, including counter and floor displays, point-of-purchase, and other signs and displays	N	X	X	2 275 125	N	X	X	N
3399503101	Nonelectric screen printed metal signs and displays	200	X	X	273 122	N	X	X	N
3399503106	Other printed or unprinted nonelectric metal signs and displays	282	X	X	336 203	N	X	X	N
3399503111	Nonelectric screen printed wood signs and displays	89	X	X	108 077	N	X	X	N
3399503116	Other printed or unprinted nonelectric wood signs and displays	176	X	X	152 087	N	X	X	N
3399503121	Nonelectric screen printed other than wood or metal signs and displays	202	X	X	222 828	N	X	X	N
3399503126	Other printed or unprinted nonelectric other than wood or metal signs and displays	510	X	X	1 182 808	N	X	X	N
3399503Y	Nonelectric signs, including counter and floor displays, point-of-purchase, and other signs and displays, nsk	N	X	X	93 607	N	X	X	N
3399503YWV	Nonelectric signs, including counter and floor displays, point-of-purchase, and other signs and displays, nsk	N	X	X	93 607	N	X	X	169 047
3399505	Advertising specialties	N	X	X	1 238 894	N	X	X	782 394
33995051	Advertising specialties	N	X	X	1 190 653	N	X	X	N
3399505101	Advertising specialties--printed promotional items on purchased materials	81	X	X	362 020	N	X	X	N
3399505106	Advertising specialties--other than printed	188	X	X	828 633	N	X	X	N
3399505Y	Advertising specialties, nsk	N	X	X	48 241	N	X	X	N
3399505YWV	Advertising specialties, nsk	N	X	X	48 241	N	X	X	N
339950W	Signs, nsk, total	N	X	X	1 556 070	N	X	X	1 080 733
339950WY	Sign manufacturing, nsk, total	N	X	X	1 556 070	N	X	X	N
339950WYWV	Sign manufacturing, nsk, for nonadministrative-record establishments	N	X	X	1 114 518	N	X	X	825 973
339950WYWY	Sign manufacturing, nsk, for administrative-record establishments	N	X	X	441 552	N	X	X	254 760

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399501	ELECTRIC SIGNS		
	United States	1 948 614	1 282 884
	Alabama	54 651	33 098
	Alaska	5 973	N
	Arizona	60 297	19 813
	Arkansas	18 672	10 976
	California	205 373	138 373
	Colorado	23 737	12 487
	Connecticut	27 337	5 489
	Florida	87 697	56 113
	Georgia	38 504	9 012
	Idaho	9 215	7 348
	Illinois	90 811	77 860
	Indiana	25 770	16 212
	Iowa	17 723	17 325
	Kansas	18 045	9 143
	Kentucky	10 878	12 511
	Louisiana	16 853	3 583
	Maine	3 717	N
	Maryland	19 946	16 349
	Massachusetts	14 994	13 203
	Michigan	108 271	39 865
	Minnesota	47 808	48 186
	Mississippi	19 441	N
	Missouri	27 860	14 845
	Nebraska	19 951	6 351
	Nevada	66 152	40 240
	New Jersey	53 377	9 629
	New Mexico	4 869	4 291
	New York	68 124	59 402
	North Carolina	31 294	25 464
	Ohio	108 129	67 849
	Oklahoma	10 839	6 777
	Oregon	19 531	9 866
	Pennsylvania	68 087	60 911
	South Carolina	15 116	11 842
	South Dakota	68 278	N
	Tennessee	70 951	68 870
	Texas	120 554	88 657
	Utah	17 135	21 849
	Virginia	29 231	20 439
	Washington	34 220	39 298
	Wisconsin	153 958	105 175
3399503	NONELECTRIC SIGNS, INCLUDING COUNTER AND FLOOR DISPLAYS, POINT-OF-PURCHASE, AND OTHER SIGNS AND DISPLAYS		
	United States	2 368 732	1 793 306
	Alabama	34 889	22 530
	Arizona	40 603	10 722
	Arkansas	27 261	N
	California	121 394	137 215
	Colorado	15 667	10 255
	Connecticut	11 748	6 886
	Florida	59 130	56 834
	Georgia	55 390	55 487
	Idaho	3 267	N
	Illinois	278 056	273 071
	Indiana	28 115	23 282
	Iowa	4 706	19 695
	Kansas	27 173	3 565
	Kentucky	71 382	16 258
	Louisiana	4 476	2 186
	Maryland	49 562	32 638
	Massachusetts	37 986	14 713
	Michigan	134 410	109 260
	Minnesota	97 748	18 857
	Mississippi	6 983	N
	Missouri	53 965	60 455
	Nebraska	2 171	N
	Nevada	22 577	2 860
	New Hampshire	4 443	2 059
	New Jersey	183 543	118 505
	New York	216 917	178 259
	North Carolina	29 779	29 377
	North Dakota	4 554	N
	Ohio	200 784	202 316
	Oklahoma	3 557	N
	Oregon	22 229	13 271
	Pennsylvania	106 896	83 825
	Rhode Island	9 437	9 973
	South Carolina	20 752	8 039
	Tennessee	38 245	13 570
	Texas	75 526	51 558
	Utah	15 608	N
	Vermont	6 054	N
	Virginia	25 472	19 330
	Washington	16 782	17 731
	Wisconsin	155 953	96 963

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399505	ADVERTISING SPECIALTIES		
	United States	1 238 894	782 394
	California	104 145	58 813
	Connecticut	38 447	N
	Florida	31 267	31 641
	Georgia	21 474	N
	Idaho	3 485	N
	Illinois	140 639	76 383
	Indiana	7 013	3 966
	Kansas	17 998	N
	Massachusetts	54 388	16 832
	Minnesota	36 987	36 681
	Missouri	70 349	70 371
	New Jersey	136 046	N
	New York	88 537	106 013
	North Carolina	3 879	N
	Ohio	53 389	18 538
	Oregon	50 548	N
	Pennsylvania	99 904	50 175
	Rhode Island	30 009	31 612
	Tennessee	41 582	27 984
	Texas	28 134	5 506
	Utah	2 848	N
	Virginia	8 286	N
	Washington	3 093	N
	Wisconsin	28 602	50 887

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339950	SIGN MFG				
32121001	Veneer and plywood	X	43 969	X	61 884
32200001	Paper and paperboard products including paperboard boxes, containers, and corrugated paperboard	X	162 608	X	154 589
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	43 839	X	41 891
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	32 153	X	34 010
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	256 822	X	178 961
33251005	Metal hardware, including hinges, handles, locks, casters, etc.	X	48 401	X	33 687
33200047	All other fabricated metal products (except castings and forgings)	X	132 348	X	89 607
33100035	Castings (rough and semifinished)	X	9 369	X	2 880
33210001	Forgings	X	2 377	X	465
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	35 337	X	31 589
331000AJ	Nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	38 668	X	38 581
33531100	Specialty transformers and fluorescent ballasts	X	59 286	X	51 327
32100043	Wood other than veneer and plywood	X	49 609	X	N
00190094	Manufactured products used for advertising specialties, such as pens, pencils, key chains, calendars, magnets, etc.	X	79 503	X	N
31300045	Textiles and fabrics	X	20 305	X	N
32591003	Printing ink	X	12 997	X	N
00970099	All other materials and components, parts, containers, and supplies	X	515 869	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 084 591	X	644 013

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339950 SIGN MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing signs and related displays of all materials (except printing paper and paperboard signs, notices, displays).

The data published with NAICS code 339950 include the following SIC industries:

3993 Signs and advertising specialties

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3843000 pt.	3843000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3699002 pt.	3699002 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114WYWW pt.	3843002	3843002	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114YWV pt.	3843002	3843002	3399121121	3914153	3914153
						3399121126	3914175	3914170 pt
3391123	38412	38412	3391151	38511	38511	3399121YWV	3914100	3914100
3391123106	3841291	3841291	3391151101	3851115	3851115			
3391123111	3841293	3841293	3391151106	3851117	3851117	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151111	3851118	3851118	3399123101	3914211	3914211
3391123YWV	3841200	3841200	3391151116	3851119	3851119	3399123106	3914235	3914235
			3391151YWV	3851100	3851100	3399123111	3914241	3914241
339112W pt.	38290 pt.	38290 pt				3399123116	3914243	3914243
339112W pt.	38410	38410	3391153	38514	38514	3399123121	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt	3391153101	3851431	3851431	3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153106	3851445	3851445	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153YWV	3851400	3851400	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWV	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391157	38516	38516	339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157101	3851612	3851612			
3391131217	3842108	3842108	3391157206	3851613	3851613	3399131	39152	39152
3391131224	3842109	3842109	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110				3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt.	3915200 pt.	3915233
			339115B101	3851702	3851702			
3391131234	3842113	3842113	339115B106 pt.	3851705 pt.	3851703	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851704	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B111	3851706	3851706	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B116	3851709	3851709	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B121	3851719	3851719	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B125	3851721	3851700 pt	3399133YWV	3915300	3915300
3391131354	3842129	3842129	339115B125	3851700	3851700 pt			
3391131457	3842131	3842131	339115W	38510	38510	3399135	39154	39154
3391131567	3842137	3842137	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131571	3842165	3842165	339115WYWW	3851002	3851002			
						339913W	39150	39150
3391131574	3842183	3842183	3391160	80720	80720	339913WYWW	3915000	3915000
3391131577	3842185	3842185	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160100 pt.	8072000 pt.	8072000 pt			
3391131584	3842189	3842189	3391160YWW	8072000 pt.	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160YWV	8072002	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131591	3842197	3842197	3391160YWV	8072002	8072000 pt			
3391131594	3842198	3842198				3399140 pt.	34998 pt.	34998 pt
3391131YWV	3842100 pt.	3842100 pt	3399111	39111	39111	3399140 pt.	39610	39610
			3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
3391135	38423	38423	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
3391135101	3842311	3842311	3399111311	3911114	3911114	3399140118	3499895	3499899 pt
3391135106	3842321	3842321	3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
3391135111	3842322	3842322	3399111516	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
3391135116	3842351	3842351	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961041 pt
3391135121	3842361	3842361	3399111531	3911198	3911198	3399140216	3961051	3961051
3391135126	3842373	3842373	3399111YWV	3911100	3911100	3399140221	3961072	3961072
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339920911F	3949575	3949575	3399411206	3951104	3951104	339950WYVW	3993000	3993000
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3399209193	3949565	3949571 pt	3399423206	3952421	3952419 pt	3399917111	3053729	3053729
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3399310	39420	39420	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
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3399310YVW	3942000	3942000	339942WYVW pt	3952002 pt	3952002 pt	3399919141	3053977	3053977
3399310YVW	3942002	3942002				3399919151 pt	3053989 pt	3053979
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			3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931111
3399323	39444	39444				3399921101 pt	3931141 pt	3931115
3399323111	3944415	3944415	3399441	39551	39551	3399921106	3931151	3931151
3399323116	3944421	3944421	3399441101	3955115	3955115	3399921YVW	3931100	3931100
3399323121	3944423	3944423	3399441201	3955110	3955110			
3399323126	3944424	3944424	3399441211	3955120	3955120	3399923	39312	39312
3399323131	3944428	3944428	3399441YVW	3955100	3955100	3399923101	3931211	3931211
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3399323206	3944413	3944413	3399443	39552	39552	3399923YVW	3931200	3931200
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3399323256	3944439							

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Gasket, Packing, and Sealing Device Manufacturing

1997

Issued September 1999

EC97M-3399M

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

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Gasket, Packing, and Sealing Device Manufacturing

1997

Issued September 1999

EC97M-3399M

1997 Economic Census

Manufacturing

Industry Series



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Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339991	Gasket, packing, & sealing device mfg	558	662	41 914	1 287 466	30 107	62 655	761 370	3 101 115	2 134 423	5 240 549	201 134
305300	Gaskets, packing & sealing devices	N	662	41 914	1 287 466	30 107	62 655	761 370	3 101 115	2 134 423	5 240 549	201 134

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339991, GASKET, PACKING, & SEALING DEVICE MFG												
United States	1	662	317	41 914	1 287 466	30 107	62 655	761 370	3 101 115	2 134 423	5 240 549	201 134
Arizona	9	7	2	158	3 310	132	274	2 178	7 610	5 204	12 740	1 117
California	2	84	42	3 994	124 210	2 834	6 194	70 405	270 620	151 886	419 806	13 349
Colorado	1	12	3	239	5 703	115	245	2 736	16 016	6 587	22 414	705
Florida	—	15	3	358	9 411	234	488	5 106	39 312	35 416	74 265	1 907
Illinois	—	48	28	5 925	196 571	3 942	7 579	101 640	435 500	290 008	722 773	35 713
Indiana	—	13	10	1 530	38 611	1 233	2 437	28 784	112 426	65 525	178 835	6 085
Kansas	—	6	2	349	8 616	297	621	6 596	22 817	25 669	48 605	388
Kentucky	1	10	7	1 033	32 021	792	1 764	22 534	71 519	67 319	136 824	4 153
Louisiana	4	11	4	210	7 332	141	316	4 152	22 864	10 817	33 778	840
Massachusetts	1	24	12	1 682	63 157	911	1 782	27 258	185 203	107 704	295 014	8 140
Michigan	3	33	22	1 373	40 975	993	1 977	23 138	88 775	69 036	156 454	5 986
Minnesota	—	19	9	1 192	36 522	858	1 758	21 342	84 260	43 747	128 696	5 142
Missouri	1	11	3	234	6 311	173	341	3 764	14 421	14 237	28 641	697
New Jersey	2	26	8	914	28 006	526	1 116	14 977	58 210	51 587	109 810	4 838
New York	—	33	14	2 151	73 688	1 530	3 066	45 490	213 192	140 682	351 982	8 127
North Carolina	—	15	9	912	25 242	712	1 525	16 884	49 776	33 295	85 341	6 790
Ohio	—	43	18	2 689	91 455	2 099	4 168	58 578	241 793	143 753	396 712	12 959
Oklahoma	1	15	3	456	9 432	380	746	6 600	26 743	24 495	50 922	2 672
Oregon	1	7	3	219	5 584	145	312	2 741	11 383	5 773	17 129	543
Pennsylvania	4	31	13	1 299	42 146	862	1 753	21 010	89 860	60 982	149 792	5 029
South Carolina	1	10	3	875	21 708	742	1 526	15 117	67 334	33 565	101 446	2 078
Tennessee	—	13	12	1 551	42 885	1 176	2 495	26 645	96 704	91 667	188 820	6 659
Texas	3	68	34	3 331	98 507	2 331	5 152	59 158	245 851	169 230	413 940	18 675
Virginia	—	12	8	1 263	33 456	1 009	2 052	21 872	90 018	80 413	173 174	6 167
Washington	2	9	1	104	4 099	72	140	1 743	6 720	3 253	9 994	463
Wisconsin	—	20	10	1 600	48 941	1 265	2 520	32 738	100 474	103 952	205 477	3 319

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339991, GASKET, PACKING, & SEALING DEVICE MFG		339991, GASKET, PACKING, & SEALING DEVICE MFG—Con.	
Companies ¹	number.. 558	Value added	\$1,000.. 3 101 115
All establishments	number.. 662	Total inventories, beginning of year	\$1,000.. 582 276
Establishments with 1 to 19 employees	number.. 345	Finished goods inventories, beginning of year	\$1,000.. 300 754
Establishments with 20 to 99 employees	number.. 216	Work-in-process inventories, beginning of year	\$1,000.. 103 905
Establishments with 100 employees or more	number.. 101	Materials and supplies inventories, beginning of year	\$1,000.. 177 617
All employees	number.. 41 914	Total inventories, end of year	\$1,000.. 583 862
Total compensation ²	\$1,000.. 1 608 172	Finished goods inventories, end of year	\$1,000.. 294 260
Annual payroll	\$1,000.. 1 287 466	Work-in-process inventories, end of year	\$1,000.. 105 388
Total fringe benefits	\$1,000.. 320 706	Materials and supplies inventories, end of year	\$1,000.. 184 214
Production workers, average for year	number.. 30 107	Gross book value of total assets at beginning of year	\$1,000.. 1 895 142
Production workers on March 12	number.. 29 848	Total capital expenditures (new and used)	\$1,000.. 201 134
Production workers on May 12	number.. 29 960	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 25 483
Production workers on August 12	number.. 30 333	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 175 651
Production workers on November 12	number.. 30 287	Total retirements ²	\$1,000.. 52 471
Production-worker hours	1,000.. 62 655	Gross book value of total assets at end of year	\$1,000.. 2 043 805
Production-worker wages	\$1,000.. 761 370	Total depreciation during year ²	\$1,000.. 135 397
Total cost of materials	\$1,000.. 2 134 423	Total rental payments ²	\$1,000.. 52 147
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 762 282	Buildings and other structures rental payments ²	\$1,000.. 31 153
Cost of resales	\$1,000.. 238 259	Machinery and equipment rental payments ²	\$1,000.. 20 994
Cost of fuels	\$1,000.. 16 082	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 13 882
Cost of purchased electricity	\$1,000.. 70 101	Response coverage ratio ⁴	percent.. 83
Cost of contract work	\$1,000.. 47 699	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 39 688
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 188 272	Response coverage ratio ⁴	percent.. 83
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 15 563
Total value of shipments	\$1,000.. 5 240 549	Response coverage ratio ⁴	percent.. 83
Primary products value of shipments	\$1,000.. 4 509 152	Cost of purchased legal services ³	\$1,000.. 9 622
Secondary products value of shipments	\$1,000.. 360 053	Response coverage ratio ⁴	percent.. 83
Total miscellaneous receipts	\$1,000.. 371 344	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 5 598
Value of resales	\$1,000.. 334 213	Response coverage ratio ⁴	percent.. 83
Contract receipts	\$1,000.. 19 027	Cost of purchased advertising services ³	\$1,000.. 10 722
Other miscellaneous receipts	\$1,000.. 18 104	Response coverage ratio ⁴	percent.. 83
Primary products specialization ratio	percent.. 92	Cost of purchased software and other data processing services ³	\$1,000.. 10 305
Value of primary products shipments made in all industries	\$1,000.. 4 823 993	Response coverage ratio ⁴	percent.. 83
Value of primary products shipments made in this industry	\$1,000.. 4 509 152	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 11 282
Value of primary products shipments made in other industries	\$1,000.. 314 841	Response coverage ratio ⁴	percent.. 83
Coverage ratio	percent.. 93		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339991, GASKET, PACKING, & SEALING DEVICE MFG												
All establishments	1	662	317	41 914	1 287 466	30 107	62 655	761 370	3 101 115	2 134 423	5 240 549	201 134
Establishments with 1 to 4 employees	8	119	—	224	6 326	180	338	3 964	14 547	11 020	25 783	837
Establishments with 5 to 9 employees	7	81	—	556	17 469	402	760	10 250	37 523	27 393	65 148	2 542
Establishments with 10 to 19 employees	3	145	—	2 035	62 664	1 420	2 693	32 835	149 649	115 888	265 755	6 988
Establishments with 20 to 49 employees	1	145	145	4 554	143 446	3 071	6 180	71 911	312 943	236 497	549 982	16 442
Establishments with 50 to 99 employees	2	71	71	4 990	144 879	3 533	7 265	81 542	316 464	263 940	578 578	19 256
Establishments with 100 to 249 employees	1	63	63	9 873	306 910	6 971	14 927	184 468	752 812	561 043	1 321 421	47 700
Establishments with 250 to 499 employees	—	25	25	8 478	244 080	6 359	13 897	161 468	605 226	433 882	1 040 990	45 579
Establishments with 500 to 999 employees	—	10	10	6 315	207 692	4 983	10 223	135 132	545 443	292 928	837 070	32 313
Establishments with 1,000 to 2,499 employees	—	3	3	4 889	154 000	3 188	6 372	79 800	366 508	191 832	555 822	29 477
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	218	—	1 359	37 280	1 024	1 795	23 038	79 720	54 113	134 585	5 334

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339991	Gasket, packing, & sealing device mfg	662	41 914	1 287 466	30 107	62 655	761 370	3 101 115	2 134 423	5 240 549	201 134
3399911	Compression packings	17	1 447	45 639	891	1 883	26 300	117 181	64 342	180 824	4 050
3399913	Nonmetallic gaskets and gasketing ..	144	10 634	345 848	7 559	14 917	192 633	861 736	725 544	1 582 349	48 700
3399915	Molded packings and seals	83	11 242	332 210	8 507	18 207	207 027	698 460	401 858	1 101 515	58 750
3399917	Metallic gaskets and machined seals.	56	5 745	184 744	3 323	7 027	87 838	448 459	372 161	833 062	33 330
3399918	Axial mechanical face seals	36	1 756	63 670	1 067	2 362	31 017	176 600	86 737	261 660	8 690
3399919	Rotary oil seals	16	5 670	153 495	4 813	10 742	118 896	436 557	230 008	662 475	23 998

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339991	Gaskets, packing, and sealing devices.....	N	X	X	4 823 993	N	X	X	3 152 696
3399911	Compression packings.....	N	X	X	207 465	N	X	X	102 899
33999111	Compression packings.....	N	X	X	207 465	N	X	X	N
3399911111	Synthetic fiber, plastics composition compression packings.....	28	X	X	126 288	19	X	X	29 384
3399911121	All other compression packings, nec.....	17	X	X	81 177	N	X	X	N
3399911Y	Compression packings, nsk.....	N	X	X	-	N	X	X	N
3399911YVV	Compression packings, nsk.....	N	X	X	-	N	X	X	314
3399913	Nonmetallic gaskets and gasketing.....	N	X	X	1 179 847	N	X	X	888 470
33999131	Elastomeric gaskets and gasketing, all materials.....	N	X	X	343 206	N	X	X	N
3399913111	Elastomeric gaskets and gasketing, all materials.....	113	X	X	343 206	106	X	X	196 033
33999132	Graphite gaskets and gasketing.....	N	X	X	47 975	N	X	X	N
3399913221	Graphite gaskets and gasketing.....	21	X	X	47 975	N	X	X	N
33999133	Other nonmetallic gaskets and gasketing, nec.....	N	X	X	785 587	N	X	X	N
3399913331	Paper, felt base, and plant fiber gaskets and gasketing.....	53	X	X	100 170	43	X	X	76 681
3399913341	Cork and cork composition gaskets and gasketing.....	34	X	X	46 617	39	X	X	81 013
3399913351	Other nonmetallic gaskets and gasketing, nec.....	106	X	X	638 800	N	X	X	N
3399913Y	Nonmetallic gaskets and gasketing, nsk.....	N	X	X	3 079	N	X	X	N
3399913YVV	Nonmetallic gaskets and gasketing, nsk.....	N	X	X	3 079	N	X	X	13 582
3399915	Molded packings and seals.....	N	X	X	1 094 525	N	X	X	687 664
33999151	Molded O-rings (including spliced, excluding metal).....	N	X	X	314 666	N	X	X	N
3399915111	Molded O-rings (including spliced, excluding metal).....	57	X	X	314 666	62	X	X	207 413
33999152	All other molded packings and seals, including nonmetallic exclusion devices and nonmetallic piston rings.....	N	X	X	756 293	N	X	X	N
3399915221	Molded squeeze-type, solid section ring seals (including rectangular, quad, Delta, D, and Tee) (excluding O-rings).....	22	X	X	68 554	12	X	X	25 076
3399915231	Molded flexible seals, dual component-cushioned rings, backed, constrained, or loaded by an elastomeric ring.....	20	X	X	78 483	14	X	X	29 386
3399915241	Molded flexible seals, single and multiple component lip type, both symmetrical and nonsymmetrical, V-rings, V-ring sets, U-cup.....	41	X	X	171 509	30	X	X	50 994
3399915251	Molded diaphragm seal-flat, rolling.....	26	X	X	67 243	18	X	X	21 468
3399915261	All other molded packings and seals, including nonmetallic exclusion devices and nonmetallic piston rings.....	74	X	X	370 504	81	X	X	328 826
3399915Y	Molded packings and seals, nsk.....	N	X	X	23 566	N	X	X	N
3399915YVV	Molded packings and seals, nsk.....	N	X	X	23 566	N	X	X	24 501
3399917	Metallic gaskets and machined seals.....	N	X	X	846 874	N	X	X	517 750
33999171	Metallic gaskets and machined seals.....	N	X	X	844 681	N	X	X	N
3399917111	Metallic spiral wound filler type gaskets and machined seals.....	14	X	X	45 307	19	X	X	46 858
3399917121	Other metallic gaskets and machined seals (exclusion devices, heavy cross-section API type, nonautomotive piston rings).....	71	X	X	799 374	58	X	X	468 084
3399917Y	Metallic gaskets and machined seals, nsk.....	N	X	X	2 193	N	X	X	N
3399917YVV	Metallic gaskets and machined seals, nsk.....	N	X	X	2 193	N	X	X	2 808
3399918	Axial mechanical face seals.....	N	X	X	261 992	N	X	X	214 915
33999181	Axial mechanical face seals, except parts.....	N	X	X	220 632	N	X	X	N
3399918111	Complete axial mechanical seals with single coil springs.....	7	X	X	63 764	10	X	X	65 965
3399918121	Complete axial mechanical seals with multiple coil springs.....	6	X	X	30 157	9	X	X	42 221
3399918131	Complete axial mechanical seals with bellows.....	4	X	X	92 122	5	X	X	30 891
3399918141	Clearance, labyrinth, and other axial mechanical face seals, nec.....	7	X	X	34 589	7	X	X	26 682
33999182	Parts for all axial mechanical face seals.....	N	X	X	40 869	N	X	X	N
3399918251	Parts for all axial mechanical face seals.....	7	X	X	40 869	8	X	X	47 417
3399918Y	Axial mechanical face seals, nsk.....	N	X	X	491	N	X	X	N
3399918YVV	Axial mechanical face seals, nsk.....	N	X	X	491	N	X	X	1 739

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339991	Gaskets, packing, and sealing devices—Con.								
3399919	Rotary oil seals	N	X	X	673 806	N	X	X	493 532
33999191	Rotary oil seals	N	X	X	673 467	N	X	X	N
3399919111	Bonded, sprung (spring-loaded) rotary oil seals	7	X	X	343 603	8	X	X	254 970
3399919121	Bonded, unsprung (nonspring-loaded) rotary oil seals	5	X	X	D	7	X	X	D
3399919131	Unitized rotary oil seals	5	X	X	D	4	X	X	D
3399919141	Nonmetallic rotary oil seals	3	X	X	34 409	10	X	X	9 471
3399919151	Other rotary oil seals (labyrinth, proximity, all metallic, inflatable, displacement, or boundary lubrication seals)	7	X	X	81 928	N	X	X	N
3399919Y	Rotary oil seals, nsk	N	X	X	339	N	X	X	N
3399919YWW	Rotary oil seals, nsk	N	X	X	339	N	X	X	364
339991W	Gaskets, packings, and sealing devices, nsk, total	N	X	X	559 484	N	X	X	247 466
339991WY	Gasket, packing, and sealing device manufacturing, nsk, total	N	X	X	559 484	N	X	X	N
339991WYWW	Gasket, packing, and sealing device manufacturing, nsk, for nonadministrative-record establishments	N	X	X	440 584	N	X	X	194 327
339991WYWY	Gasket, packing, and sealing device manufacturing, nsk, for administrative-record establishments	N	X	X	118 900	N	X	X	53 139

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399911	COMPRESSION PACKINGS		
	United States	207 465	102 899
	Florida	6 240	N
	Illinois	6 351	16 202
	Michigan	3 359	N
	Texas	7 392	6 627
3399913	NONMETALLIC GASKETS AND GASKETING		
	United States	1 179 847	888 470
	Alabama	19 008	N
	California	51 352	39 986
	Colorado	7 852	N
	Connecticut	5 944	3 567
	Illinois	256 186	201 247
	Indiana	23 646	29 399
	Massachusetts	20 254	20 905
	Michigan	15 897	43 946
	Minnesota	48 955	52 765
	Missouri	18 915	14 033
	New Jersey	11 666	8 505
	New York	179 217	108 139
	North Carolina	18 482	N
	Ohio	41 571	41 307
	Oklahoma	3 543	N
	Oregon	10 119	N
	Pennsylvania	35 071	17 289
	Tennessee	71 773	21 319
	Texas	39 984	11 205
	Virginia	34 186	54 476
	Wisconsin	77 345	89 137

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399915	MOLDED PACKINGS AND SEALS		
	United States	1 094 525	687 664
	California	141 308	110 072
	Connecticut	24 259	N
	Illinois	79 546	45 436
	Indiana	20 610	38 284
	Massachusetts	63 907	53 071
	Michigan	9 975	14 740
	Minnesota	35 196	23 920
	New Jersey	28 021	N
	New York	28 827	N
	Ohio	53 102	38 298
	Texas	74 248	34 100
3399917	METALLIC GASKETS AND MACHINED SEALS		
	United States	846 874	517 750
	California	27 323	9 198
	Connecticut	26 486	N
	New Jersey	14 928	4 317
	Ohio	63 845	18 401
	Pennsylvania	3 812	5 507
	Texas	73 605	80 014
	Wisconsin	45 382	N
3399918	AXIAL MECHANICAL FACE SEALS		
	United States	261 992	214 915
	California	48 396	N
	Illinois	46 223	89 942
	Texas	31 568	15 405
3399919	ROTARY OIL SEALS		
	United States	673 806	493 532
	California	6 732	5 934

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339991	GASKET, PACKING, & SEALING DEVICE MFG				
32199901	Cork products	X	23 648	X	53 932
32212029	Building paper and board	X	52 926	X	59 683
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	130 679	X	52 380
32521205	Synthetic rubber	X	179 725	X	140 489
32520005	Other plastics materials and synthetic resins	X	78 032	X	93 659
11321001	Natural rubber	X	37 370	X	10 715
32600017	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	X	70 988	X	46 976
33290009	Fabricated metal wire products (including wire rope, cable, springs, etc.)	X	27 408	X	17 720
33200015	All other fabricated metal products (including forgings)	X	126 004	X	116 201
33120013	Steel tinplate, tin free steel, terneplate, and blackplate	X	21 380	X	13 800
33120077	All other steel shapes and forms (except forgings and fabricated metal products)	X	102 631	X	118 303
32799213	Natural graphite	X	23 151	X	N
32799901	Artificial graphite	X	1 818	X	N
32799201	Carbon, ground or treated	X	28 880	X	N
00970099	All other materials and components, parts, containers, and supplies	X	620 068	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	237 574	X	130 741

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339991 GASKET, PACKING, AND SEALING DEVICE MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing gaskets, packing, and sealing devices of all materials.

The data published with NAICS code 339991 include the following SIC industry:

3053 Gaskets, packing and sealing devices

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt				3399121101	3914111	3914111
3391121661	3841196	3841196	339114W pt.	36990 pt.	36990 pt	3399121106	3914131	3914131
3391121766	3841199	3841199				3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	38430	38430	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114WYWW pt.	3699000 pt.	3699000 pt	3399121121	3914153	3914153
			339114WYWW pt.	3843000	3843000	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWW pt.	3699002 pt.	3699002 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWW pt.	3843002	3843002			
3391123111	3841293	3841293				3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151	38511	38511	3399123101	39142 pt.	39142 pt
3391123YWV	3841200	3841200	3391151101	3851115	3851115	3399123106	3914211	3914211
			3391151106	3851117	3851117	3399123111	3914235	3914235
339112W pt.	38290 pt.	38290 pt	3391151111	3851118	3851118	3399123116	3914241	3914241
			3391151116	3851119	3851119	3399123121	3914273	3914273
339112W pt.	38410	38410	3391151YWV	3851100	3851100	3399123126	3914275	3914270 pt
339112WYWW pt.	3829000 pt.	3829000 pt				3399123YWV pt.	3479024	3479021 pt
339112WYWW pt.	3841000	3841000	3391153	38514	38514	3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt	3391153101	3851431	3851431	3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002	3391153106	3851445	3851445			
			3391153YWV	3851400	3851400	339912W pt.	34790 pt.	34790 pt
3391131	38421 pt.	38421 pt						
339113101	3842101	3842101	3391155	38515	38515	339912W pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105	3391155YWV	3851500	3851500	339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106				339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107	3391157	38516	38516			
3391131217	3842108	3842108	3391157101	3851612	3851612	3399131	39152	39152
3391131224	3842109	3842109	3391157206	3851613	3851613	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110	3391157YWV	3851600	3851600	3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112				3399131100 pt.	3915200 pt.	3915233
			339115B	38517	38517			
3391131234	3842113	3842113	339115B101	3851702	3851702	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt.	3851705 pt.	3851703	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851704	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131354	3842129	3842129	339115B125	3851721	3851700 pt			
3391131457	3842131	3842131	339115B1700	3851700	3851700 pt	3399135	39154	39154
3391131567	3842137	3842137				3399135100	3915400	3915400
3391131571	3842165	3842165	339115W	38510	38510			
			339115WYWW	3851000	3851000	339913W	39150	39150
3391131574	3842183	3842183	339115WYWW	3851002	3851002	339913WYWW	3915000	3915000
3391131577	3842185	3842185				339913WYWW	3915002	3915002
3391131581	3842187	3842187	3391160	80720	80720			
3391131584	3842189	3842189	3391160100 pt.	8072001	8072000 pt	3399140 pt.	34790 pt.	34790 pt
3391131587	3842191	3842191	3391160100 pt.	8072000 pt.	8072000 pt			
3391131591	3842197	3842197	3391160YWW	8072000 pt.	8072000 pt	3399140 pt.	34990 pt.	34990 pt
3391131594	3842198	3842198	3391160YWV	8072002	8072000 pt			
3391131YWV	3842100 pt.	3842100 pt				3399140 pt.	34998 pt.	34998 pt
			3399111	39111	39111			
3391135	38423	38423	3399111101	3911111	3911111	3399140 pt.	39610	39610
3391135101	3842311	3842311	3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961031
3391135106	3842321	3842321	3399111311	3911114	3911114	3399140111 pt.	3961032 pt.	3961041 pt
3391135111	3842322	3842322	3399111421 pt.	3911121 pt.	3911131	3399140118	3499895	3499899 pt
3391135116	3842351	3842351	3399111526	3911115	3911115	3399140201	3961011	3961011
3391135121	3842361	3842361	3399111531	3911151	3911151	3399140206 pt.	3961022 pt.	3961021
3391135126	3842373	3842373	3399111536	3911198	3911198	3399140206 pt.	3961022 pt.	3961041 pt
3391135YWV	3842300	3842300	3399111YWV	3911100	3911100	3399140216	3961051	3961051
						3399140221	3961072	3961072
3391137	25991	25991				3399140226 pt.	3479026	3479021 pt
3391137100	2599100	2599100	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961096
			3399113101	3911311	3911311			
339113W pt.	25990 pt.	25990 pt	3399113106 pt.	3911315 pt.	3911321	3399140226 pt.	3961098 pt.	3961099
			3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3479000 pt.	3479000 pt
339113W pt.	38420 pt.	38420 pt	3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3499000 pt.	3499000 pt
339113WYWW pt.	2599000 pt.	2599000 pt	3399113116 pt.	3911317 pt.	3911341 pt	3399140YWW pt.	3499800 pt.	3499800 pt
339113WYWW pt.	3842000 pt.	3842000 pt	3399113116	3911398	3911398	3399140YWW pt.	3961000	3961000
339113WYWW pt.	2599002 pt.	2599002 pt	3399113YWV	3911300	3911300	3399140YWW pt.	3479002 pt.	3479002 pt
339113WYWW pt.	3842002 pt.	3842002 pt				3399140YWW pt.	3499002 pt.	3499002 pt
			3399115 pt.	34790 pt.	34790 pt	3399140YWW pt.	3961002	3961002

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399927.....	39314.....	39314.....	3399941 pt.....	39911.....	39911.....	339995W.....	39950.....	39950.....
3399927116 pt.....	3931437 pt.....	3931450.....	3399941101.....	3991113.....	3991113.....	339995WYWWW.....	3995000.....	3995000.....
3399927116 pt.....	3931437 pt.....	3931452.....	3399941106.....	3991198.....	3991198.....	339995WYWY.....	3995002.....	3995002.....
3399927201.....	3931413.....	3931413.....	3399941311.....	2392471.....	2392471.....			
3399927206.....	3931415.....	3931415.....	3399941316.....	2392473.....	2392473.....	3399991.....	39991.....	39991.....
3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
3399927221.....	3931488.....	3931488.....	3399941YVW pt.....	2392400 pt.....	2392400 pt.....	3399991106.....	3999117.....	3999117.....
3399927226.....	3931498.....	3931498.....	3399941YVW pt.....	3991100.....	3991100.....	3399991111.....	3999140.....	3999140.....
3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
3399927YVW.....	3931400.....	3931400.....	3399943.....	39912.....	39912.....	3399991121.....	3999171.....	3999171.....
			3399943101 pt.....	3991251 pt.....	3991211.....	3399991YVW.....	3999100.....	3999100.....
339992W.....	39310.....	39310.....	3399943101 pt.....	3991251 pt.....	3991233.....			
339992WYWWW.....	3931000.....	3931000.....	3399943206.....	3991243.....	3991243.....	3399993.....	39992.....	39992.....
339992WYWY.....	3931002.....	3931002.....	3399943211 pt.....	3991253 pt.....	3991281.....	3399993101.....	3999222.....	3999222.....
			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
3399931 pt.....	31310 pt.....	31310 pt.....	3399943211 pt.....	3991253 pt.....	3991285.....	3399993YVW.....	3999200.....	3999200.....
			3399943YVW.....	3991200.....	3991200.....			
3399931 pt.....	39651.....	39651.....				3399995.....	39994.....	39994.....
3399931101 pt.....	3965131 pt.....	3965101.....	3399945.....	39913.....	39913.....	3399995100.....	3999400.....	3999400.....
3399931101 pt.....	3965131 pt.....	3965109.....	3399945101.....	3991321.....	3991321.....			
3399931106 pt.....	3965133 pt.....	3965111.....	3399945106 pt.....	3991328 pt.....	3991327.....	3399997.....	39997.....	39997.....
3399931106 pt.....	3965133 pt.....	3965119.....	3399945106 pt.....	3991328 pt.....	3991329.....	3399997100.....	3999700.....	3999700.....
3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
3399931111 pt.....	3965135 pt.....	3965121.....	3399945216.....	3991338.....	3991338.....	3399999.....	39998.....	39998.....
3399931111 pt.....	3965135 pt.....	3965129.....	3399945221.....	3991343.....	3991343.....	3399999101.....	3999813.....	3999813.....
3399931YVW pt.....	3131000 pt.....	3131000 pt.....	3399945226.....	3991398.....	3991398.....	3399999106 pt.....	3999816 pt.....	3999816.....
3399933YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
						3399999YVW.....	3999800.....	3999800.....
3399933.....	39654.....	39654.....						
3399933101 pt.....	3965441 pt.....	3965422.....	339994W pt.....	23920 pt.....	23920 pt.....	339999C.....	24991 pt.....	24991 pt.....
3399933101 pt.....	3965441 pt.....	3965423.....				339999C101.....	2499111.....	2499111.....
3399933106 pt.....	3965443 pt.....	3965431.....	339994W pt.....	39910.....	39910.....	339999C206.....	2499161.....	2499161.....
3399933106 pt.....	3965443 pt.....	3965433.....	339994WYVW pt.....	2392000 pt.....	2392000 pt.....	339999C311.....	2499115.....	2499115.....
3399933106 pt.....	3965443 pt.....	3965439.....	339994WYVW pt.....	2392002 pt.....	2392002 pt.....	339999C316.....	2499171.....	2499171.....
3399933YVW.....	3965400.....	3965400.....	339994WYVW pt.....	3991002.....	3991002.....	339999CYVW.....	2499100 pt.....	2499100 pt.....
3399935.....	39656.....	39656.....				339999H.....	39999 pt.....	39999 pt.....
3399935101.....	3965620.....	3965620.....	3399951.....	39951.....	39951.....	339999H101.....	3999907.....	3999907.....
3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
3399935111.....	3965633.....	3965633.....	3399951206.....	3995115.....	3995115.....	339999H111.....	3999951.....	3999951.....
3399935116.....	3965651.....	3965651.....	3399951YVW.....	3995100.....	3995100.....	339999H121.....	3999981.....	3999981.....
3399935121.....	3965671.....	3965671.....				339999H151 pt.....	3999997 pt.....	3999913 pt.....
3399935126 pt.....	3965691 pt.....	3965681.....	3399953.....	39952.....	39952.....	339999H151 pt.....	3999997 pt.....	3999924.....
3399935126 pt.....	3965691 pt.....	3965689.....	3399953101.....	3995211.....	3995211.....	339999H151 pt.....	3999997 pt.....	3999944 pt.....
3399935YVW.....	3965600.....	3965600.....	3399953106.....	3995252.....	3995252.....	339999H151 pt.....	3999997 pt.....	3999999 pt.....
			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
339993W pt.....	31310 pt.....	31310 pt.....				339999W pt.....	24990 pt.....	24990 pt.....
			3399955.....	39953.....	39953.....			
339993W pt.....	39650.....	39650.....	3399955100 pt.....	3995300 pt.....	3995300.....	339999W pt.....	39990 pt.....	39990 pt.....
339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
339993WYWY pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYWWW pt.....	3999000 pt.....	3999000 pt.....
339993WYWY pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYWY pt.....	2499002 pt.....	2499002 pt.....
			3399955100 pt.....	3995300 pt.....	3995393.....	339999WYWY pt.....	3999002 pt.....	3999002 pt.....
3399941 pt.....	23924 pt.....	23924 pt.....						

Musical Instrument Manufacturing

1997

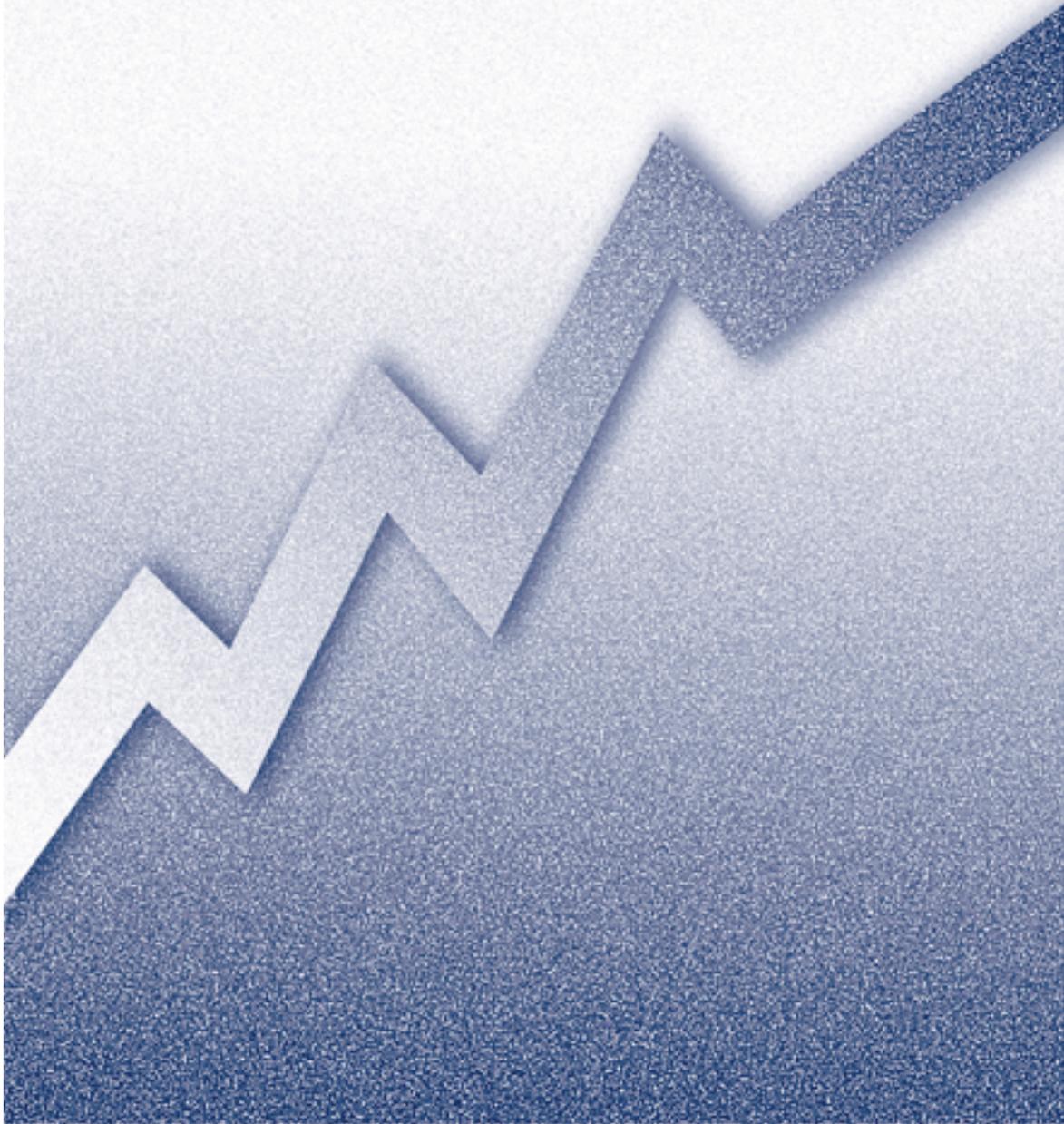
Issued August 1999

EC97M-3399N

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Musical Instrument Manufacturing

1997

Issued August 1999

EC97M-3399N

1997 Economic Census

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339992	Musical instrument mfg	548	571	13 286	359 101	10 756	21 787	242 299	843 377	493 019	1 339 135	36 262
393100	Musical instruments	N	571	13 286	359 101	10 756	21 787	242 299	843 377	493 019	1 339 135	36 262

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339992, MUSICAL INSTRUMENT MFG												
United States	1	571	104	13 286	359 101	10 756	21 787	242 299	843 377	493 019	1 339 135	36 262
California	-	100	20	2 593	69 174	2 027	3 784	40 898	158 926	100 515	260 478	12 248
Connecticut	-	9	2	156	4 765	119	269	3 249	7 998	4 119	12 547	172
Illinois	1	31	9	703	19 628	541	1 075	12 177	46 794	30 762	79 509	3 021
Indiana	1	18	8	1 283	39 094	1 146	2 274	33 095	100 587	32 514	131 724	3 191
Massachusetts	1	22	8	517	15 733	352	705	8 375	40 619	13 458	53 010	2 444
Michigan	1	23	3	445	13 163	380	896	9 679	21 082	19 525	41 011	794
New York	-	50	10	1 549	43 904	1 251	2 520	27 585	108 367	43 664	147 592	2 627
North Carolina	-	19	3	279	5 405	235	418	3 757	13 644	25 602	38 721	328
Ohio	-	22	7	593	16 610	507	1 003	13 110	48 643	13 493	62 660	622
Pennsylvania	-	23	6	1 117	33 748	861	1 672	20 703	77 914	30 631	107 011	3 256
Tennessee	-	19	3	713	19 581	609	1 415	14 574	46 322	24 114	68 186	523
Washington	2	17	4	244	5 753	191	383	4 215	13 529	6 976	20 650	541

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339992, MUSICAL INSTRUMENT MFG		339992, MUSICAL INSTRUMENT MFG—Con.	
Companies ¹	number.. 548	Value added	\$1,000.. 843 377
All establishments	number.. 571	Total inventories, beginning of year	\$1,000.. 321 981
Establishments with 1 to 19 employees	number.. 467	Finished goods inventories, beginning of year	\$1,000.. 100 967
Establishments with 20 to 99 employees	number.. 73	Work-in-process inventories, beginning of year	\$1,000.. 102 638
Establishments with 100 employees or more	number.. 31	Materials and supplies inventories, beginning of year	\$1,000.. 118 376
All employees	number.. 13 286	Total inventories, end of year	\$1,000.. 336 132
Total compensation ²	\$1,000.. 435 683	Finished goods inventories, end of year	\$1,000.. 94 958
Annual payroll	\$1,000.. 359 101	Work-in-process inventories, end of year	\$1,000.. 105 908
Total fringe benefits	\$1,000.. 76 582	Materials and supplies inventories, end of year	\$1,000.. 135 266
Production workers, average for year	number.. 10 756	Gross book value of total assets at beginning of year	\$1,000.. 292 450
Production workers on March 15	number.. 10 817	Total capital expenditures (new and used)	\$1,000.. 36 262
Production workers on May 15	number.. 10 768	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 11 186
Production workers on August 15	number.. 10 657	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 25 076
Production workers on November 15	number.. 10 782	Total retirements ²	\$1,000.. 5 391
Production-worker hours	1,000.. 21 787	Gross book value of total assets at end of year	\$1,000.. 323 321
Production-worker wages	\$1,000.. 242 299	Total depreciation during year ²	\$1,000.. 23 072
Total cost of materials	\$1,000.. 493 019	Total rental payments ²	\$1,000.. 14 498
Cost of materials, parts, containers, etc., consumed	\$1,000.. 413 476	Buildings and other structures rental payments ²	\$1,000.. 7 615
Cost of resales	\$1,000.. 54 894	Machinery and equipment rental payments ²	\$1,000.. 6 883
Cost of fuels	\$1,000.. 3 604	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 509
Cost of purchased electricity	\$1,000.. 9 359	Response coverage ratio ⁴	percent.. 81
Cost of contract work	\$1,000.. 11 686	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 12 790
Quantity of electricity purchased for heat and power	1,000 kWh.. 129 263	Response coverage ratio ⁴	percent.. 81
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Cost of purchased communications services ³	\$1,000.. 3 790
Total value of shipments	\$1,000.. 1 339 135	Response coverage ratio ⁴	percent.. 81
Primary products value of shipments	\$1,000.. 1 237 437	Cost of purchased legal services ³	\$1,000.. 3 469
Secondary products value of shipments	\$1,000.. 17 386	Response coverage ratio ⁴	percent.. 81
Total miscellaneous receipts	\$1,000.. 84 312	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 494
Value of resales	\$1,000.. 73 566	Response coverage ratio ⁴	percent.. 81
Contract receipts	\$1,000.. 3 395	Cost of purchased advertising services ³	\$1,000.. 12 736
Other miscellaneous receipts	\$1,000.. 7 351	Response coverage ratio ⁴	percent.. 81
Primary products specialization ratio	percent.. 98	Cost of purchased software and other data processing services ³	\$1,000.. 1 289
Value of primary products shipments made in all industries	\$1,000.. 1 263 381	Response coverage ratio ⁴	percent.. 81
Value of primary products shipments made in this industry	\$1,000.. 1 237 437	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 4 873
Value of primary products shipments made in other industries	\$1,000.. 25 944	Response coverage ratio ⁴	percent.. 81
Coverage ratio	percent.. 97		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339992, MUSICAL INSTRUMENT MFG												
All establishments	1	571	104	13 286	359 101	10 756	21 787	242 299	843 377	493 019	1 339 135	36 262
Establishments with 1 to 4 employees	8	323	—	582	12 437	507	905	8 903	27 938	14 114	42 872	973
Establishments with 5 to 9 employees	3	88	—	596	13 817	446	858	9 698	33 396	25 277	58 172	904
Establishments with 10 to 19 employees	4	56	—	792	19 160	616	1 187	12 996	37 683	19 088	57 020	1 078
Establishments with 20 to 49 employees	2	38	38	1 131	27 094	861	1 718	18 292	62 897	30 481	91 810	2 568
Establishments with 50 to 99 employees	1	35	35	2 526	63 026	1 953	3 817	39 058	177 130	101 675	279 871	8 014
Establishments with 100 to 249 employees	—	20	20	3 258	93 782	2 615	5 601	59 277	206 485	132 311	343 396	7 807
Establishments with 250 to 499 employees	—	10	10	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	303	—	687	13 204	576	1 030	9 602	29 111	15 032	45 072	1 190

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339992	Musical instrument mfg ...	571	13 286	359 101	10 756	21 787	242 299	843 377	493 019	1 339 135	36 262
3399921	Pianos	10	1 455	42 141	1 213	2 558	30 536	108 402	112 599	220 441	3 246
3399923	Organs	43	1 198	34 391	859	1 748	20 035	74 290	41 393	114 909	2 324
3399925	Piano and organ parts	12	746	18 576	639	1 316	12 813	27 542	31 069	64 756	706
3399927	Other musical instruments and parts ..	125	8 307	231 007	6 750	13 735	155 114	561 417	270 712	827 996	27 221

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339992	Musical Instruments	N	X	X	1 263 381	N	X	X	901 584
3399921	Pianos	N	X	X	185 738	N	X	X	140 473
33999211	Pianos	N	X	X	185 738	N	X	X	N
3399921101	Vertical, upright, or console pianos	8	X	X	D	N	X	X	N
3399921106	Grand pianos	4	X	X	D	3	X	X	55 474
3399921Y	Pianos, nsk	N	X	X	D	N	X	X	N
3399921YVV	Pianos, nsk	N	X	X	D	N	X	X	872
3399923	Organs	N	X	X	88 842	N	X	X	86 992
33999231	Organs	N	X	X	86 195	N	X	X	N
3399923101	Pipe and reed organs	37	X	X	33 384	37	X	X	35 271
3399923106	Electronic organs	8	X	X	52 811	7	X	X	51 721
3399923Y	Organs, nsk	N	X	X	2 647	N	X	X	N
3399923YVV	Organs, nsk	N	X	X	2 647	N	X	X	-
3399925	Piano and organ parts	N	X	X	59 300	N	X	X	29 316
33999251	Piano and organ parts	N	X	X	58 630	N	X	X	N
3399925101	Piano parts (actions, attachments, strings, tuning pins, etc.), except benches	7	X	X	29 364	10	X	X	15 624
3399925106	Organ parts and materials, except benches	13	X	X	29 266	11	X	X	13 692
3399925Y	Piano and organ parts, nsk	N	X	X	670	N	X	X	N
3399925YVV	Piano and organ parts, nsk	N	X	X	670	N	X	X	-
3399927	Other musical instruments and parts	N	X	X	814 362	N	X	X	575 980
33999271	Electronic musical instruments	N	X	X	110 578	N	X	X	N
3399927116	Electronic musical instruments and synthesizers	25	X	X	110 578	N	X	X	N
33999272	Other musical instruments, except electronic	N	X	X	493 458	N	X	X	N
3399927201	Woodwind musical instruments	13	X	X	126 411	16	X	X	82 593
3399927206	Brass wind musical instruments	9	X	X	96 371	10	X	X	74 520
3399927211	Nonelectronic fretted or string instruments (such as harps, harpsichords, guitars, banjos, etc)	22	X	X	162 333	22	X	X	41 358
3399927221	Percussion musical instruments (cymbals, drums, vibraphones (nonelectronic), etc)	13	X	X	95 793	12	X	X	54 141
3399927226	Other nonelectronic musical instruments, including accordions, harmonicas, bagpipes, etc	13	X	X	12 550	13	X	X	15 146
33999273	Accessories and parts for other musical instruments	N	X	X	204 467	N	X	X	N
3399927331	Accessories and parts for other musical instruments, such as reed mouthpieces, strings (excluding piano strings), music stands, drummers' traps, etc.	51	X	X	204 467	56	X	X	157 285
3399927Y	Other musical instruments and parts, nsk	N	X	X	5 859	N	X	X	N
3399927YVV	Other musical instruments and parts, nsk	N	X	X	5 859	N	X	X	3 217
339992W	Musical instruments, nsk	N	X	X	115 139	N	X	X	68 823
339992WY	Musical instruments, nsk	N	X	X	115 139	N	X	X	N
339992WYVV	Musical instruments, nsk, for nonadministrative-record establishments	N	X	X	73 325	N	X	X	48 474
339992WYWY	Musical instruments, nsk, for administrative-record establishments	N	X	X	41 814	N	X	X	20 349

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399921	PIANOS		
	United States	185 738	140 473
3399923	ORGANS		
	United States	88 842	86 992
	Illinois	23 691	N
	Massachusetts	3 452	3 550
	Ohio	7 277	8 633
3399925	PIANO AND ORGAN PARTS		
	United States	59 300	29 316
3399927	OTHER MUSICAL INSTRUMENTS AND PARTS		
	United States	814 362	575 980
	California	226 076	132 298
	Florida	4 073	N
	Illinois	43 721	23 079
	Indiana	115 632	83 725
	Massachusetts	38 806	22 649
	New York	64 518	36 357
	North Carolina	7 298	N
	Ohio	49 232	N
	Pennsylvania	72 279	57 531
	Washington	8 460	6 879

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339992	MUSICAL INSTRUMENT MFG				
32100019	Rough and dressed lumber	X	62 565	X	46 741
32221001	Paperboard containers, boxes, and corrugated paperboard	X	13 678	X	5 356
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	7 531	X	4 755
33431005	Loudspeakers, microphones, and tuners (all types)	X	4 887	X	4 126
001900A9	All other electronic and electrical equipment and components, except computer equipment	X	8 302	X	N
001900B4	Electronic components and accessories, including circuit boards and recording heads	X	43 358	X	44 648
33999200	Parts specially designed for musical instruments, including actions, strings, mouthpieces, etc.	X	100 119	X	100 313
00970099	All other materials and components, parts, containers, and supplies	X	119 655	X	76 700
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	53 381	X	48 655

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers’ records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339992 MUSICAL INSTRUMENT MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing musical instruments (except toys).

The data published with NAICS code 339992 include the following SIC industry:

3931 Musical instruments

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3843000 pt.	3843000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3699002 pt.	3699002 pt	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	339114WYWW pt.	3843002	3843002	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	3391151	38511	38511	3399121121	3914153	3914153
			3391151101	3851115	3851115	3399121126	3914175	3914170 pt
3391123	38412	38412	3391151106	3851117	3851117	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151111	3851118	3851118			
3391123111	3841293	3841293	3391151116	3851119	3851119	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151YWW	3851100	3851100	3399123101	39142 pt.	39142 pt
3391123YWW	3841200	3841200				3399123106	3914211	3914211
						3399123111	3914235	3914235
339112W pt.	38290 pt.	38290 pt				3399123116	3914241	3914241
						3399123121	3914273	3914273
339112WYWW pt.	3829000 pt.	3829000 pt				3399123126	3479024	3479021 pt
339112WYWW pt.	3841000	3841000				3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3829002 pt.	3829002 pt				3399123YWW pt.	3914200 pt.	3914200 pt
339112WYWW pt.	3841002	3841002						
3391131	38421 pt.	38421 pt						
339113101	3842101	3842101						
339113104	3842102	3842102						
3391131207	3842104	3842104						
3391131211	3842105	3842105						
3391131214	3842106	3842106						
3391131217	3842107	3842107						
3391131217	3842108	3842108						
3391131224	3842109	3842109						
3391131227	3842110	3842110						
3391131231	3842112	3842112						
3391131234	3842113	3842113						
3391131337	3842122	3842122						
3391131341	3842123	3842123						
3391131344	3842124	3842124						
3391131347	3842126	3842126						
3391131351	3842127	3842127						
3391131354	3842129	3842129						
3391131457	3842131	3842131						
3391131567	3842137	3842137						
3391131571	3842165	3842165						
3391131574	3842183	3842183						
3391131577	3842185	3842185						
3391131581	3842187	3842187						
3391131584	3842189	3842189						
3391131587	3842191	3842191						
3391131591	3842197	3842197						
3391131594	3842198	3842198						
3391131YWW	3842100 pt.	3842100 pt						
3391135	38423	38423						
3391135101	3842311	3842311						
3391135106	3842321	3842321						
3391135111	3842322	3842322						
3391135116	3842351	3842351						
3391135121	3842361	3842361						
3391135126	3842373	3842373						
3391135YWW	3842300	3842300						
3391137	25991	25991						
3391137100	2599100	2599100						
339113W pt.	25990 pt.	25990 pt						
339113W pt.	38420 pt.	38420 pt						
339113WYWW pt.	2599000 pt.	2599000 pt						
339113WYWW pt.	3842000 pt.	3842000 pt						
339113WYWW pt.	2599002 pt.	2599002 pt						
339113WYWW pt.	3842002 pt.	3842002 pt						
3391141 pt.	36992 pt.	36992 pt						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
3399201101	3949106	3949106	3399323271	3944495	3944495	3399501101	3993112	3993112
3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
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Fastener, Button, Needle, and Pin Manufacturing

1997

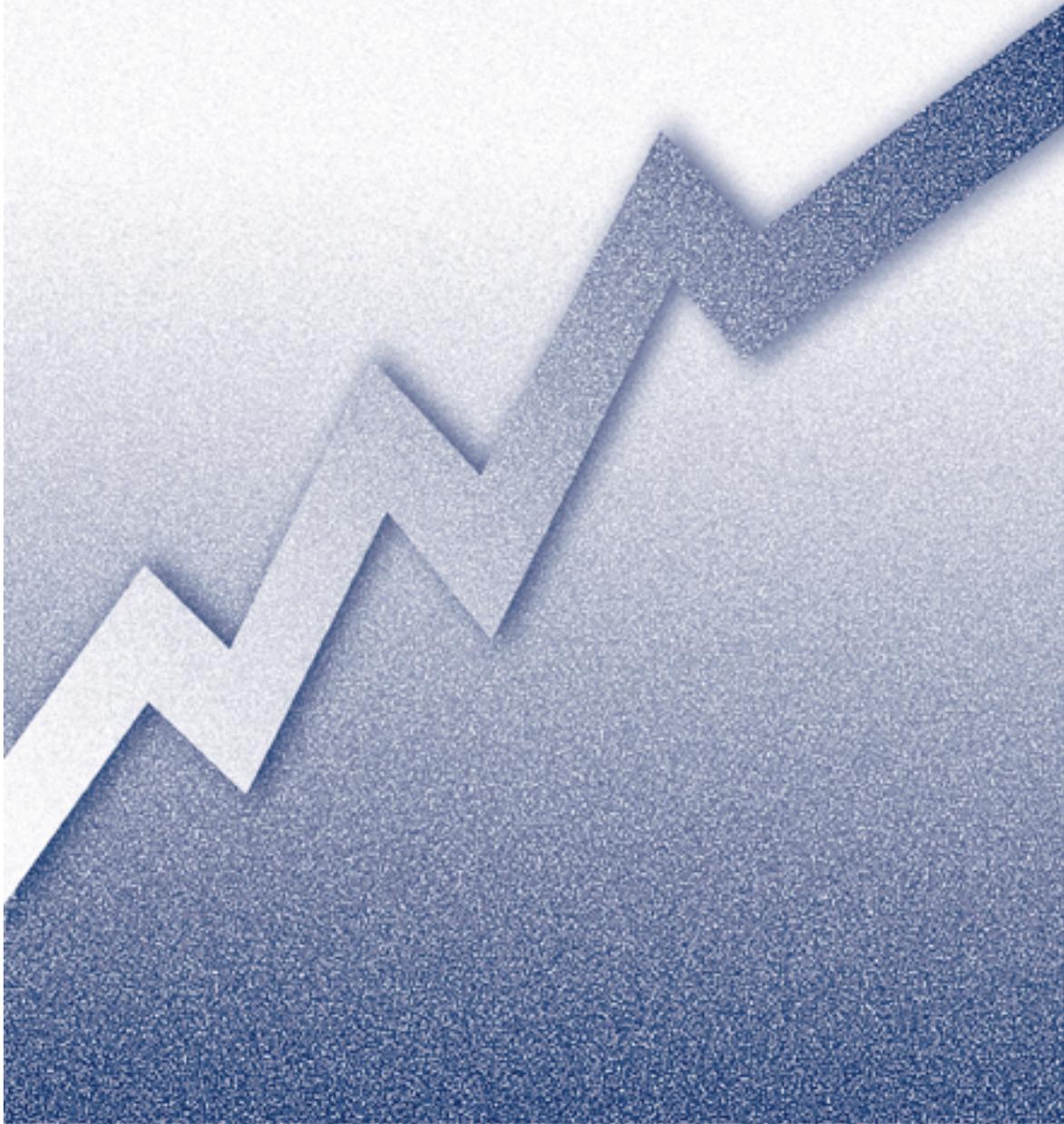
Issued September 1999

EC97M-33990

1997 Economic Census

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Fastener, Button, Needle, and Pin Manufacturing

1997

Issued September 1999

EC97M-33990

1997 Economic Census

Manufacturing

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339993	Fastener, button, needle, & pin mfg	237	250	7 836	206 059	5 609	12 702	122 279	494 567	344 837	828 510	48 250
313130	Footwear cut stock & findings (pt)	N	1	D	D	D	D	D	D	D	D	D
396500	Fasteners, buttons, needles, & pins	N	249	D	D	D	D	D	D	D	D	D

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339993, FASTENER, BUTTON, NEEDLE, & PIN MFG												
United States	1	250	71	7 836	206 059	5 609	12 702	122 279	494 567	344 837	828 510	48 250
California	2	33	8	397	8 815	293	588	5 582	18 256	17 977	35 903	1 509
Connecticut	-	18	8	650	16 840	447	1 016	11 283	33 826	21 165	54 612	2 943
Illinois	3	11	4	296	6 079	221	408	3 742	14 893	14 851	29 324	512
Massachusetts	6	5	2	282	7 096	93	182	2 645	13 714	14 370	27 901	245
New Jersey	1	10	3	178	5 410	147	299	3 717	12 617	7 436	20 042	1 002
North Carolina	2	5	3	717	18 727	573	1 186	11 429	34 694	20 575	54 957	3 561
Pennsylvania	-	7	2	114	3 433	66	131	1 356	5 149	10 491	16 293	431
Rhode Island	1	14	4	241	6 314	181	390	3 675	15 398	15 807	30 914	521
Texas	1	10	2	152	1 838	60	110	738	7 452	6 318	13 975	424

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339993, FASTENER, BUTTON, NEEDLE, & PIN MFG		339993, FASTENER, BUTTON, NEEDLE, & PIN MFG—Con.	
Companies ¹	number.. 237	Value added	\$1,000.. 494 567
All establishments	number.. 250	Total inventories, beginning of year	\$1,000.. 139 334
Establishments with 1 to 19 employees	number.. 179	Finished goods inventories, beginning of year	\$1,000.. 54 169
Establishments with 20 to 99 employees	number.. 53	Work-in-process inventories, beginning of year	\$1,000.. 39 972
Establishments with 100 employees or more	number.. 18	Materials and supplies inventories, beginning of year	\$1,000.. 45 193
All employees	number.. 7 836	Total inventories, end of year	\$1,000.. 147 972
Total compensation ²	\$1,000.. 247 898	Finished goods inventories, end of year	\$1,000.. 59 823
Annual payroll	\$1,000.. 206 059	Work-in-process inventories, end of year	\$1,000.. 45 212
Total fringe benefits	\$1,000.. 41 839	Materials and supplies inventories, end of year	\$1,000.. 42 937
Production workers, average for year	number.. 5 609	Gross book value of total assets at beginning of year	\$1,000.. 566 199
Production workers on March 12	number.. 5 595	Total capital expenditures (new and used)	\$1,000.. 48 250
Production workers on May 12	number.. 5 589	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 7 426
Production workers on August 12	number.. 5 657	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 40 824
Production workers on November 12	number.. 5 595	Total retirements ²	\$1,000.. 16 935
Production-worker hours	1,000.. 12 702	Gross book value of total assets at end of year	\$1,000.. 597 514
Production-worker wages	\$1,000.. 122 279	Total depreciation during year ²	\$1,000.. 41 647
Total cost of materials	\$1,000.. 344 837	Total rental payments ²	\$1,000.. 45 279
Cost of materials, parts, containers, etc., consumed	\$1,000.. 302 614	Buildings and other structures rental payments ²	\$1,000.. 18 416
Cost of resales	\$1,000.. 12 963	Machinery and equipment rental payments ²	\$1,000.. 26 863
Cost of fuels	\$1,000.. 3 717	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 521
Cost of purchased electricity	\$1,000.. 14 148	Response coverage ratio ⁴	percent.. 77
Cost of contract work	\$1,000.. 11 395	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 2 840
Quantity of electricity purchased for heat and power	1,000 kWh.. 270 079	Response coverage ratio ⁴	percent.. 77
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 1 056
Total value of shipments	\$1,000.. 828 510	Response coverage ratio ⁴	percent.. 77
Primary products value of shipments	\$1,000.. 773 156	Cost of purchased legal services ³	\$1,000.. 183
Secondary products value of shipments	\$1,000.. 26 952	Response coverage ratio ⁴	percent.. 77
Total miscellaneous receipts	\$1,000.. 28 402	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 220
Value of resales	\$1,000.. 19 148	Response coverage ratio ⁴	percent.. 77
Contract receipts	\$1,000.. 3 078	Cost of purchased advertising services ³	\$1,000.. 705
Other miscellaneous receipts	\$1,000.. 6 176	Response coverage ratio ⁴	percent.. 77
Primary products specialization ratio	percent.. 96	Cost of purchased software and other data processing services ³	\$1,000.. 1 287
Value of primary products shipments made in all industries	\$1,000.. 803 347	Response coverage ratio ⁴	percent.. 77
Value of primary products shipments made in this industry	\$1,000.. 773 156	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 537
Value of primary products shipments made in other industries	\$1,000.. 30 191	Response coverage ratio ⁴	percent.. 77
Coverage ratio	percent.. 96		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)	
	E ¹	Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
339993, FASTENER, BUTTON, NEEDLE, & PIN MFG												
All establishments	1	250	71	7 836	206 059	5 609	12 702	122 279	494 567	344 837	828 510	48 250
Establishments with 1 to 4 employees	7	106	—	216	4 499	150	297	2 760	10 468	10 827	21 435	1 979
Establishments with 5 to 9 employees	5	51	—	326	7 460	230	426	4 595	17 414	17 068	34 028	2 873
Establishments with 10 to 19 employees	3	22	—	300	7 158	203	394	3 965	15 516	13 867	30 079	1 624
Establishments with 20 to 49 employees	1	32	32	1 022	24 423	765	1 479	14 732	46 703	45 376	92 560	2 706
Establishments with 50 to 99 employees	2	21	21	1 523	38 867	1 130	2 409	22 845	88 826	61 319	151 649	3 789
Establishments with 100 to 249 employees	1	14	14	2 221	52 177	1 633	3 530	34 548	125 941	94 738	216 633	12 402
Establishments with 250 to 499 employees	—	3	3	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 1,000 to 2,499 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	124	—	400	7 848	278	520	4 976	17 690	16 686	34 128	3 896

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339993	Fastener, button, needle, & pin mfg	250	7 836	206 059	5 609	12 702	122 279	494 567	344 837	828 510	48 250
3399931	Buttons and parts (except precious or semiprecious metals and precious or semiprecious stones)	42	2 297	59 014	1 574	3 423	35 746	147 027	87 313	228 532	12 306
3399933	Zippers and slide fasteners	25	2 686	68 792	2 085	5 193	43 751	159 413	127 289	283 818	18 642
3399935	Needles, pins, fasteners (except slide), and similar notions	47	2 295	66 917	1 541	3 329	35 387	162 766	107 830	268 919	12 769

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339993	Fasteners, buttons, needles and pins	N	X	X	803 347	N	X	X	N
3399931	Buttons and parts (except precious or semiprecious metals and precious or semiprecious stones)	N	X	X	199 707	N	X	X	N
33999311	Buttons and parts (except precious or semiprecious metals and precious or semiprecious stones)	N	X	X	188 908	N	X	X	N
3399931101	Metal buttons and parts (except precious or semiprecious metals and precious or semiprecious stones)	17	X	X	88 288	N	X	X	N
3399931106	Plastics buttons and parts (except precious or semiprecious stones)	15	X	X	62 679	N	X	X	N
3399931111	Other buttons, button blanks or molds, backs and parts for sale as such	16	X	X	37 941	N	X	X	N
3399931Y	Buttons and parts (except precious or semiprecious metals and precious or semiprecious stones), nsk	N	X	X	10 799	N	X	X	N
3399931YWV	Buttons and parts (except precious or semiprecious metals and precious or semiprecious stones), nsk	N	X	X	10 799	N	X	X	N
3399933	Zippers and slide fasteners	N	X	X	249 546	N	X	X	234 685
33999331	Zippers and slide fasteners	N	X	X	247 926	N	X	X	N
3399933101	Plastics zippers and slide fasteners	16	X	X	96 130	N	X	X	N
3399933106	Metal zippers and slide fasteners	18	X	X	151 796	N	X	X	N
3399933Y	Zippers and slide fasteners, nsk	N	X	X	1 620	N	X	X	N
3399933YWV	Zippers and slide fasteners, nsk	N	X	X	1 620	N	X	X	999
3399935	Needles, pins, fasteners (except slide), and similar notions	N	X	X	311 403	N	X	X	407 356
33999351	Needles, pins, fasteners (except slide), and similar notions	N	X	X	307 899	N	X	X	N
3399935101	Snap fasteners (all types)	6	X	X	27 600	10	X	X	90 980
3399935106	Buckles (including those covered with fabrics or other material, but excluding those used for costume jewelry and shoes)	22	X	X	72 687	34	X	X	109 163
3399935111	Other fasteners (including tape fasteners, hook and eyes, rivet and burrs, trimmings, etc, except slide)	26	X	X	171 783	27	X	X	120 577
3399935116	Hair curlers (except rubber and those designed for beauty parlor use)	-	X	X	-	3	X	X	D
3399935121	Needles (except hypodermic, phonograph, and styli)	3	X	X	D	5	X	X	15 737
3399935126	Pins (except jewelry)	10	X	X	D	N	X	X	N
3399935Y	Needles, pins, fasteners (except slide), and similar notions, nsk	N	X	X	3 504	N	X	X	N
3399935YWV	Needles, pins, fasteners (except slide), and similar notions, nsk	N	X	X	3 504	N	X	X	629
339993W	Fasteners, buttons, needles, and pins, total	N	X	X	42 691	N	X	X	N
339993WY	Fasteners, buttons, needles, and pins, nsk, total	N	X	X	42 691	N	X	X	N
339993WYWV	Fasteners, buttons, needles, and pins, nsk, for nonadministrative-record establishments	N	X	X	9 900	N	X	X	N
339993WYWY	Fasteners, buttons, needles, and pins, nsk, for administrative-record establishments	N	X	X	32 791	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)		
		1997	1992	
3399931	BUTTONS AND PARTS (EXCEPT PRECIOUS OR SEMIPRECIOUS METALS AND PRECIOUS OR SEMIPRECIOUS STONES)			
	United States	199 707	N	
	California	5 094	N	
	Connecticut	32 678	N	
	Iowa	10 906	N	
	New Jersey	7 845	N	
	New York	63 715	N	
	Rhode Island	6 410	N	
3399933	ZIPPERS AND SLIDE FASTENERS			
	United States	249 546	234 685	
	California	13 836	N	
	Illinois	6 998	N	
	New York	16 742	19 363	
3399935	NEEDLES, PINS, FASTENERS (EXCEPT SLIDE), AND SIMILAR NOTIONS			
	United States	311 403	407 356	
	California	6 262	N	
	Connecticut	17 396	26 665	
	Illinois	27 421	29 471	
	New Jersey	7 308	33 800	
	New York	7 741	48 267	
		Pennsylvania	11 875	11 530
		Rhode Island	21 873	37 557
		Wisconsin	22 569	18 789

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339993	FASTENER, BUTTON, NEEDLE, & PIN MFG				
33200005	Fabricated metal products, including forgings	X	19 342	X	21 759
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	17 644	X	17 227
33100039	Aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	15 103	X	5 350
33142111	Copper and copper-base alloy shapes and forms (except castings, forgings, and fabricated metal products)	X	54 740	X	46 826
33100083	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	2 687	X	5 570
31320005	Cotton and manmade fiber fabrics, broadwoven and narrow woven	X	38 866	X	46 836
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	25 233	X	17 609
33999301	Buttons, zippers, and slide fasteners	X	12 905	X	15 932
00970099	All other materials and components, parts, containers, and supplies	X	82 015	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	34 079	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339993 FASTENER, BUTTON, NEEDLE, AND PIN MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing fasteners, buttons, needles, pins, and buckles (except precious metals or precious and semiprecious stones and gems).

The data published with NAICS code 339993 include the following SIC industries:

3131 Footwear cut stock and findings (pt)
3965 Fasteners, buttons, needles, and pins

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWW pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWW pt.	3699200 pt.	3699200 pt	3399115YWW pt.	3911400	3911400
3391121216	3841123	3841123	3391141YWW pt.	3843100	3843100			
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWW pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWW pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWW pt.	3911002	3911002
			3391143YWW	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114WYWW pt.	3843000 pt.	3843000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3699002 pt.	3699002 pt	3399121111	3914141	3914141
3391121YWW pt.	3829500	3829500 pt	339114WYWW pt.	3843002	3843002	3399121116	3914143	3914143
3391121YWW pt.	3841100	3841100	3391151	38511	38511	3399121121	3914153	3914153
			3391151101	3851115	3851115	3399121126	3914175	3914170 pt
3391123	38412	38412	3391151106	3851117	3851117	3399121YWW	3914100	3914100
3391123106	3841291	3841291	3391151111	3851118	3851118			
3391123111	3841293	3841293	3391151116	3851119	3851119	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296	3391151YWW	3851100	3851100	3399123101	39142 pt.	39142 pt
3391123YWW	3841200	3841200				3399123106	3914211	3914211
						3399123111	3914235	3914235
339112W pt.	38290 pt.	38290 pt				3399123116	3914241	3914241
						3399123121	3914273	3914273
339112WYWW pt.	3829000 pt.	3829000 pt				3399123126	3914275	3914270 pt
339112WYWW pt.	3841000	3841000				3399123YWW pt.	3479024	3479021 pt
339112WYWW pt.	3829002 pt.	3829002 pt				3399123YWW pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3841002	3841002				3399123YWW pt.	3914200 pt.	3914200 pt
3391131	38421 pt.	38421 pt	3391155	38515	38515	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391155101	3851525	3851525	339912WYWW pt.	39140 pt.	39140 pt
339113104	3842102	3842102	3391155206	3851527	3851527	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391155YWW	3851500	3851500	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105				339912WYWW pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106				339912WYWW pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107						
3391131217	3842108	3842108						
3391131224	3842109	3842109						
3391131227	3842110	3842110						
3391131231	3842112	3842112						
3391131234	3842113	3842113	339115B	38517	38517	3399131	39152	39152
3391131337	3842122	3842122	339115B101	3851702	3851702	3399131100 pt.	3915200 pt.	3915200
3391131341	3842123	3842123	339115B106 pt.	3851705 pt.	3851703	3399131100 pt.	3915200 pt.	3915211
3391131344	3842124	3842124	339115B106 pt.	3851705 pt.	3851704	3399131100 pt.	3915200 pt.	3915233
3391131347	3842126	3842126	339115B111	3851706	3851706			
3391131351	3842127	3842127	339115B116	3851709	3851709	3399133	39153	39153
3391131354	3842129	3842129	339115B121	3851719	3851719	3399133101	3915311	3915311
3391131457	3842131	3842131	339115B125	3851721	3851700 pt	3399133206	3915312	3915312
3391131567	3842137	3842137	339115BYWW	3851700	3851700 pt	3399133211	3915321	3915321
3391131571	3842165	3842165				3399133316	3915331	3915331
						3399133YWW	3915300	3915300
3391131574	3842183	3842183	339115W	38510	38510	3399135	39154	39154
3391131577	3842185	3842185	339115WYWW	3851000	3851000	3399135100	3915400	3915400
3391131581	3842187	3842187	339115WYWW	3851002	3851002			
3391131584	3842189	3842189						
3391131587	3842191	3842191	3391160	80720	80720	339913W	39150	39150
3391131591	3842197	3842197	3391160100 pt.	8072001	8072000 pt	339913WYWW	3915000	3915000
3391131594	3842198	3842198	3391160100 pt.	8072000 pt.	8072000 pt	339913WYWW	3915002	3915002
3391131YWW	3842100 pt.	3842100 pt	3391160YWW	8072000 pt.	8072000 pt			
			3391160YWW	8072002	8072000 pt			
3391135	38423	38423	3399111	39111	39111	3399140 pt.	34790 pt.	34790 pt
3391135101	3842311	3842311	3399111101	3911111	3911111	3399140 pt.	34998 pt.	34998 pt
3391135106	3842321	3842321	3399111206	3911112	3911112	3399140 pt.	39610	39610
3391135111	3842322	3842322	3399111311	3911114	3911114	3399140111 pt.	3961032 pt.	3961031
3391135116	3842351	3842351	3399111421 pt.	3911121 pt.	3911131	3399140118 pt.	3499895	3499899 pt
3391135121	3842361	3842361	3399111516	3911115	3911115	3399140201	3961011	3961011
3391135126	3842373	3842373	3399111526	3911151	3911151	3399140206 pt.	3961022 pt.	3961021
3391135YWW	3842300	3842300	3399111531	3911198	3911198	3399140206 pt.	3961022 pt.	3961041 pt
			3399111YWW	3911100	3911100	3399140216	3961051	3961051
						3399140221	3961072	3961072
3391137	25991	25991				3399140226 pt.	3479026	3479021 pt
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			3399113101	3911311	3911311	3399140YWW pt.	3479000 pt.	3479000 pt
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						3399140YWW pt.	3961002	3961002
3391141 pt.	36992 pt.	36992 pt	3399115 pt.	34790 pt.	34790 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
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3399201106	3949111	3949111	3399323276 pt	3944499 pt	3944420	3399501206	3993113	3993113
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3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
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3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
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3399203	39492	39492	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203101	3949231	3949231	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203206	3949241	3949241	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
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3399203416	3949247	3949247	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203421	3949298	3949298	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203YVW	3949200	3949200	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
			3399325236	3944530	3944530	3399503106 pt	3993203 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301				3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302						
3399205YVW	3949300	3949300						
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3399207	39494	39494	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
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3399207111	3949411	3949402 pt	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993272 pt
3399207121	3949421	3949406 pt	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993276 pt
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3399207141	3949441	3949406 pt	3399327YVW	3944600	3944600	3399503126 pt	3993211 pt	3993252 pt
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3399207YVW	3949400	3949400	3399329100 pt	3944718 pt	3944716			
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3399209	39495	39495	339932W	39440 pt	39440 pt	3399505	39933	39933
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3399209106	3949515	3949515	339932WYVW	3944002 pt	3944002 pt	3399505106	3993351	3993300 pt
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339920911F	3949575	3949575	3399411206	3951104	3951104	339950WYVW	3993000	3993000
339920911K	3949577	3949577	3399411311	3951113	3951113	339950WYVW	3993002	3993002
339920911P	3949581	3949593 pt	3399411YVW	3951100	3951100			
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3399209126	3949536	3949536	3399413YVW	3951200	3951200	3399911YVW	3053400	3053400
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339920912K	3949595	3949595	3399415101	3951305	3951305	3399913111	3053515	3053515
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3399209131	3949537	3949537	3399415YVW	3951300	3951300	3399913351 pt	3053529 pt	3053511
3399209136	3949538	3949538				3399913351 pt	3053529 pt	3053513
			339941W	39510	39510	3399913351 pt	3053529 pt	3053521
3399209141	3949539	3949539	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053531
3399209146	3949541	3949541	339941WYVW	3951002	3951002	3399913YVW	3053500	3053500
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3399209156 pt	3949561 pt	3949564	3399421 pt	25311 pt	25311 pt	3399915	30536	30536
3399209156 pt	3949561 pt	3949586	3399421101	39523	39523	3399915111	3053621	3053621
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3399209166	3949585	3949585	3399421116	3952313	3952313	3399915231	3053625	3053625
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3399209181	3949576	3949553 pt	3399421YVW pt	2531100 pt	2531100 pt	3399915261	3053635	3053635
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3399209193	3949565	3949571 pt	3399423206	3952421	3952419 pt	3399917111	3053729	3053729
3399209196	3949570	3949570 pt	3399423YVW	3952400 pt	3952400 pt	3399917121	3053748	3053748
3399209YVW	3949500	3949500				3399917YVW	3053700	3053700
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339920WYVW	3949000	3949000	3399425000 pt	3579930	3579930	3399918111	3053810	3053810
339920WYVW	3949002	3949002	339942W pt	25310 pt	25310 pt	3399918121	3053813	3053813
			339942W pt	35790 pt	35790 pt	3399918131	3053815	3053815
3399310	39420	39420	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
3399310106	3942012	3942012	339942W pt	35790 pt	35790 pt	3399918251	3053817	3053817
3399310111	3942021	3942021	339942W pt	35790 pt	35790 pt	3399918YVW	3053800	3053800
3399310131	3942056	3942056	339942WYVW pt	2531000 pt	2531000 pt			
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3399310301	3942008	3942008	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310321	3942053	3942053	339942WYVW pt	3579002 pt	3579002 pt	3399919121	3053973	3053973
3399310326	3942054	3942054	339942WYVW pt	3579002 pt	3579002 pt	3399919131	3053975	3053975
3399310YVW	3942000	3942000	339942WYVW pt	3952002 pt	3952002 pt	3399919141	3053977	3053977
3399310YVW	3942002	3942002				3399919151 pt	3053989 pt	3053979
			3399430	39530	39530	3399919151 pt	3053989 pt	3053981
3399321	39443 pt	39443 pt	3399430101	3953013	3953013	3399919YVW	3053900	3053900
3399321101	3944316	3944316	3399430106	3953015	3953015			
3399321106	3944326	3944346 pt	3399430211	3953033	3953033	339991W	30530	30530
3399321111	3944381	3944381	3399430316	3953035	3953035	339991WYVW	3053000	3053000
3399321116	3944397	3944397	3399430321	3953037	3953037	339991WYVW	3053002	3053002
3399321YVW	3944300 pt	3944300 pt	3399430326	3953098	3953098			
			3399430YVW	3953000	3953000	3399921	39311	39311
			3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931111
3399323	39444	39444				3399921101 pt	3931141 pt	3931115
3399323111	3944415	3944415	3399441	39551	39551	3399921106	3931151	3931151
3399323116	3944421	3944421	3399441101	3955115	3955115	3399921YVW	3931100	3931100
3399323121	3944423	3944423	3399441201	3955110	3955110			
3399323126	3944424	3944424	3399441211	3955120	3955120	3399923	39312	39312
3399323131	3944428	3944428	3399441YVW	3955100	3955100	3399923101	3931211	3931211
3399323201	3944411	3944411				3399923106	3931251	3931251
3399323206	3944413	3944413	3399443	39552	39552	3399923YVW	3931200	3931200
3399323236	3944429	3944429	3399443100	3955200	3955200			
3399323241	3944431	3944431				3399925	39313	39313
3399323256	3944439	3944439	339944W	39550	39550			

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Broom, Brush, and Mop Manufacturing

1997

Issued September 1999

EC97M-3399P

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

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Broom, Brush, and Mop Manufacturing

1997

Issued September 1999

EC97M-3399P

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339994	Broom, brush, & mop mfg	308	333	16 995	438 851	12 774	24 681	263 485	1 132 772	918 715	2 035 800	87 251
239230	Housefurnishings, n.e.c. (pt)	N	58	2 944	63 782	2 454	4 694	42 237	158 317	161 703	321 250	6 117
399100	Brooms & brushes	N	275	14 051	375 069	10 320	19 987	221 248	974 455	757 012	1 714 550	81 134

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
339994, BROOM, BRUSH, & MOP MFG												
United States	-	333	151	16 995	438 851	12 774	24 681	263 485	1 132 772	918 715	2 035 800	87 251
Alabama	1	4	1	162	2 879	129	227	1 774	5 323	7 478	12 773	113
California	-	23	11	591	18 146	447	870	9 706	33 122	30 319	64 321	944
Florida	2	13	3	184	4 042	145	264	2 300	9 044	7 934	16 889	464
Georgia	1	7	5	440	10 725	335	714	5 870	29 158	24 070	53 138	1 500
Illinois	-	21	14	1 388	45 699	964	2 398	23 986	113 621	76 870	190 110	7 564
Kansas	-	4	3	528	12 506	296	624	6 015	39 900	24 708	65 832	2 353
Massachusetts	-	14	9	749	19 269	492	1 024	9 426	47 154	40 701	91 489	2 779
Michigan	-	10	3	633	17 164	444	676	9 384	39 468	23 865	62 703	1 392
Minnesota	-	4	3	266	7 580	183	444	3 988	18 086	14 818	32 764	610
Missouri	-	7	4	144	3 348	120	207	1 780	7 626	8 273	16 041	123
New Jersey	-	15	6	333	9 191	241	448	5 527	26 076	33 079	58 896	1 454
North Carolina	-	9	4	1 084	22 187	863	1 337	15 269	45 133	52 687	96 634	2 312
Ohio	-	32	17	2 042	59 363	1 560	3 053	36 377	196 530	144 221	331 052	9 938
Pennsylvania	2	13	6	799	23 017	588	1 110	12 396	53 337	40 830	91 319	3 023
South Carolina	-	5	3	209	3 826	180	356	2 218	8 641	13 920	22 656	227
Tennessee	-	10	6	1 278	27 809	1 089	2 011	20 973	87 290	64 705	151 981	5 753
Texas	1	25	5	423	7 124	256	488	3 917	32 615	29 605	62 318	2 577
Wisconsin	1	13	8	1 164	31 464	831	1 574	20 019	93 846	75 185	167 381	5 287

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339994, BROOM, BRUSH, & MOP MFG		339994, BROOM, BRUSH, & MOP MFG—Con.	
Companies ¹	number.. 308	Value added	\$1,000.. 1 132 772
All establishments	number.. 333	Total inventories, beginning of year	\$1,000.. 277 975
Establishments with 1 to 19 employees	number.. 182	Finished goods inventories, beginning of year	\$1,000.. 119 009
Establishments with 20 to 99 employees	number.. 106	Work-in-process inventories, beginning of year	\$1,000.. 31 125
Establishments with 100 employees or more	number.. 45	Materials and supplies inventories, beginning of year	\$1,000.. 127 841
All employees	number.. 16 995	Total inventories, end of year	\$1,000.. 304 706
Total compensation ²	\$1,000.. 529 925	Finished goods inventories, end of year	\$1,000.. 134 246
Annual payroll	\$1,000.. 438 851	Work-in-process inventories, end of year	\$1,000.. 31 575
Total fringe benefits	\$1,000.. 91 074	Materials and supplies inventories, end of year	\$1,000.. 138 885
Production workers, average for year	number.. 12 774	Gross book value of total assets at beginning of year	\$1,000.. 536 084
Production workers on March 12	number.. 12 884	Total capital expenditures (new and used)	\$1,000.. 87 251
Production workers on May 12	number.. 12 815	Capital expenditures for buildings and other structures	
Production workers on August 12	number.. 12 831	(new and used)	\$1,000.. 12 423
Production workers on November 12	number.. 12 566	Capital expenditures for machinery and equipment (new	
Production-worker hours	1,000.. 24 681	and used)	\$1,000.. 74 828
Production-worker wages	\$1,000.. 263 485	Total retirements ²	\$1,000.. 11 492
Total cost of materials	\$1,000.. 918 715	Gross book value of total assets at end of year	\$1,000.. 611 843
Cost of materials, parts, containers, etc., consumed	\$1,000.. 814 114	Total depreciation during year ²	\$1,000.. 42 518
Cost of resales	\$1,000.. 74 044	Total rental payments ²	\$1,000.. 19 388
Cost of fuels	\$1,000.. 4 091	Buildings and other structures rental payments ²	\$1,000.. 12 333
Cost of purchased electricity	\$1,000.. 16 095	Machinery and equipment rental payments ²	\$1,000.. 7 055
Cost of contract work	\$1,000.. 10 371	Cost of purchased services for the repair of buildings and other	
Quantity of electricity purchased for heat and power	1,000 kWh.. 261 747	structures ³	\$1,000.. 3 245
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Response coverage ratio ⁴	percent.. 75
Total value of shipments	\$1,000.. 2 035 800	Cost of purchased services for the repair of machinery and	
Primary products value of shipments	\$1,000.. 1 831 108	equipment ³	\$1,000.. 17 677
Secondary products value of shipments	\$1,000.. 92 763	Response coverage ratio ⁴	percent.. 75
Total miscellaneous receipts	\$1,000.. 111 929	Cost of purchased communications services ³	\$1,000.. 9 205
Value of resales	\$1,000.. 110 513	Response coverage ratio ⁴	percent.. 75
Contract receipts	\$1,000.. D	Cost of purchased legal services ³	\$1,000.. 3 991
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 75
Primary products specialization ratio	percent.. 95	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 3 608
Value of primary products shipments made in all industries	\$1,000.. 1 908 339	Response coverage ratio ⁴	percent.. 75
Value of primary products shipments made in this industry	\$1,000.. 1 831 108	Cost of purchased advertising services ³	\$1,000.. 10 461
Value of primary products shipments made in other		Response coverage ratio ⁴	percent.. 75
industries	\$1,000.. 77 231	Cost of purchased software and other data processing	
Coverage ratio	percent.. 95	services ³	\$1,000.. 2 965
		Response coverage ratio ⁴	percent.. 75
		Cost of purchased refuse removal (including hazardous waste)	
		services ³	\$1,000.. 1 212
		Response coverage ratio ⁴	percent.. 75

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339994, BROOM, BRUSH, & MOP MFG												
All establishments	-	333	151	16 995	438 851	12 774	24 681	263 485	1 132 772	918 715	2 035 800	87 251
Establishments with 1 to 4 employees	8	96	-	212	4 207	156	294	2 703	11 086	9 423	20 330	648
Establishments with 5 to 9 employees	8	43	-	303	7 329	236	416	4 344	19 634	16 322	35 684	1 291
Establishments with 10 to 19 employees	1	43	-	619	17 145	453	862	8 669	54 061	40 197	93 718	2 333
Establishments with 20 to 49 employees	-	72	72	2 346	54 728	1 747	3 182	30 608	130 198	126 345	254 154	7 231
Establishments with 50 to 99 employees	-	34	34	2 479	65 169	1 847	3 603	35 582	178 371	161 879	337 221	10 405
Establishments with 100 to 249 employees	-	32	32	4 852	115 436	3 783	7 376	72 800	346 984	273 224	614 719	21 675
Establishments with 250 to 499 employees	-	8	8	3 119	85 767	2 361	4 588	54 957	225 284	148 348	373 482	33 442
Establishments with 500 to 999 employees	-	5	5	3 065	89 070	2 191	4 360	53 822	167 154	142 977	306 492	10 226
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	8	137	-	663	13 789	510	895	8 522	37 058	31 173	67 568	2 681

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339994	Broom, brush, & mop mfg	333	16 995	438 851	12 774	24 681	263 485	1 132 772	918 715	2 035 800	87 251
3399941	Brooms, mops, and dusters	80	5 817	130 967	4 663	8 708	85 239	366 651	340 632	700 103	16 959
3399943	Paint and varnish brushes, rollers, and pads	35	3 046	78 850	2 281	4 354	49 196	228 552	185 492	407 651	14 641
3399945	Other brushes	105	7 522	215 909	5 368	10 742	121 017	504 948	365 902	869 488	53 632

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339994	Brooms, brushes, and mops	N	X	X	1 908 339	N	X	X	N
3399941	Brooms, mops, and dusters	N	X	X	639 265	N	X	X	N
33999411	Brooms	N	X	X	269 564	N	X	X	N
3399941101	Household floor brooms	30	X	X	103 952	35	X	X	71 626
3399941106	Other brooms (industrial brooms, whiskbrooms, toy brooms, hearth brooms, streetsweeping machine brooms, etc)	47	X	X	165 612	41	X	X	81 731
33999413	Mops and dusters	N	X	X	351 143	N	X	X	N
3399941311	Dry mops and dusters (excluding dusting cloths, including refills)	29	X	X	67 293	28	X	X	45 073
3399941316	Wet mops (except sponge mops, including refills)	41	X	X	177 064	46	X	X	106 556
3399941321	Sponge mops (including refills)	15	X	X	106 786	15	X	X	91 127
3399941Y	Brooms, mops, and dusters, nsk	N	X	X	18 558	N	X	X	N
3399941YWV	Brooms, mops, and dusters, nsk	N	X	X	18 558	N	X	X	N
3399943	Paint and varnish brushes, rollers, and pads	N	X	X	403 195	N	X	X	384 647
33999431	Whitewash, kalsomine, paperhanging, marking, and stenciling brushes	N	X	X	183 120	N	X	X	N
3399943101	Whitewash, kalsomine, paperhanging, marking, and stenciling brushes	27	X	X	183 120	N	X	X	N
33999432	Paint rollers and roller frames, both complete sets and replacement rollers, and paint pads and holders	N	X	X	217 842	N	X	X	N
3399943206	Paint pads and holders	15	X	X	39 989	13	X	X	39 795
3399943211	Paint rollers, roller frames, and replacement rollers	31	X	X	177 853	N	X	X	N
3399943Y	Paint and varnish brushes, rollers, and pads, nsk	N	X	X	2 233	N	X	X	N
3399943YWV	Paint and varnish brushes, rollers, and pads, nsk	N	X	X	2 233	N	X	X	29 773
3399945	Other brushes	N	X	X	810 455	N	X	X	604 741
33999451	Personal brushes, including toothbrushes and hairbrushes	N	X	X	257 534	N	X	X	N
3399945101	Toothbrushes	15	X	X	226 464	8	X	X	207 964
3399945106	Other personal brushes (including shaving brushes and hairbrushes)	13	X	X	31 070	N	X	X	N
33999452	Other brushes, including household, industrial and artists' brushes	N	X	X	543 506	N	X	X	N
3399945211	Household maintenance brushes (floor, scrub, dusting, window, etc), including any twisted-in-wire brushes	28	X	X	105 610	25	X	X	56 419
3399945216	Industrial maintenance brushes (floor, scrub, dusting, window, etc), including any twisted-in-wire brushes	48	X	X	166 464	41	X	X	101 376
3399945221	Industrial brushes (except maintenance) (including power-driven, rotary, end, cup, jewelers' and dentists' brushes, etc)	28	X	X	98 426	33	X	X	105 145
3399945226	Other brushes, including artists' brushes and hair pencils, except artists' airbrushes	40	X	X	173 006	31	X	X	84 391
3399945Y	Other brushes, nsk	N	X	X	9 415	N	X	X	N
3399945YWV	Other brushes, nsk	N	X	X	9 415	N	X	X	4 346
339994W	Brooms, brushes, and mops, nsk, total	N	X	X	55 424	N	X	X	N
339994WY	Broom, brush, and mop manufacturing, nsk, total	N	X	X	55 424	N	X	X	N
339994WYWV	Broom, brush, and mop manufacturing, nsk, for nonadministrative-record establishments	N	X	X	10 174	N	X	X	N
339994WYWY	Broom, brush, and mop manufacturing, nsk, for administrative-record establishments	N	X	X	45 250	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399941	BROOMS, MOPS, AND DUSTERS		
	United States	639 265	N
	California	13 487	N
	Florida	2 169	N
	Illinois	67 974	N
	Massachusetts	31 252	N
	Missouri	13 018	N
	Ohio	126 315	N
	Pennsylvania	14 091	N
	South Carolina	20 274	N
	Tennessee	47 385	N
	Texas	32 729	N
	Washington	2 510	N
Wisconsin	10 584	N	
3399943	PAINT AND VARNISH BRUSHES, ROLLERS, AND PADS		
	United States	403 195	384 647
	California	6 227	N
	New Jersey	14 045	13 129
	New York	52 362	51 095
3399945	OTHER BRUSHES		
	United States	810 455	604 741
	California	39 839	26 718
	Georgia	19 885	N
	Illinois	65 078	51 620
	Massachusetts	47 905	20 194
	Michigan	33 124	7 741
	New Jersey	11 229	9 393
	New York	36 179	36 177
	Ohio	75 693	79 205
	Pennsylvania	64 942	39 495
	Texas	18 114	12 022
	Wisconsin	43 691	24 624

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339994	BROOM, BRUSH, & MOP MFG				
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	84 928	X	N
33200081	Fabricated metal products (except forgings)	X	28 115	X	N
33100035	Castings (rough and semifinished)	X	1 350	X	503
33210001	Forgings	X	423	X	N
33100033	Metal shapes and forms, except castings, forgings, and fabricated metal products	X	22 010	X	N
11199800	Broomcorn	X	9 515	X	9 052
31300001	Yarns and textiles made of cotton, wool, silk, and manmade fibers	X	152 637	X	35 846
32100045	All other wood products except wood brush handles and backs and furniture	X	7 378	X	N
32199903	Wood brush handles and backs	X	56 002	X	30 047
32221001	Paperboard containers, boxes, and corrugated paperboard	X	57 176	X	29 363
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	62 079	X	47 680
33999900	Dressed hair (including bristle and horsehair)	X	26 827	X	16 348
00970099	All other materials and components, parts, containers, and supplies	X	260 085	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	45 589	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B. NAICS Codes, Titles, and Descriptions

339994 BROOM, BRUSH, AND MOP MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing brooms, mops, and brushes.

The data published with NAICS code 339994 include the following SIC industries:

2392 Housefurnishings, n.e.c. (pt)
3991 Brooms and brushes

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt	3911413 pt	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt	3911413 pt	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt	3911415 pt	3911431
3391121 pt.	38295 pt	38295 pt	3391141121 pt	3699265	3699200 pt	3399115111 pt	3911415 pt	3911441 pt
3391121 pt.	38411	38411	3391141122	3843106	3843106	3399115116	3911451	3911451
3391121101	3841112	3841112	3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121106	3841131	3841131	3391141236	3843108	3843108	3399115121 pt	3911481 pt	3911461
3391121211	3841121	3841121	3391141241	3843109	3843109	3399115121 pt	3911481 pt	3911471
3391121216	3841123	3841123	3391141246	3843111	3843111	3399115YWV pt	3479000 pt	3479000 pt
3391121321	3841142	3841142	3391141YWV pt	3699200 pt	3699200 pt	3399115YWV pt	3911400	3911400
3391121326	3841149	3841149	3391141YWV pt	3843100	3843100	339911W pt.	34790 pt	34790 pt
3391121431	3841185	3841185	3391143	38432	38432	339911W pt.	39110	39110
3391121536	3841186	3841186	3391143101	3843201	3843201	339911WYWW pt.	3479000 pt	3479000 pt
3391121641	3841172	3841172	3391143106	3843202	3843202	339911WYWW pt.	3911000	3911000
3391121646	3841184	3841184	3391143111	3843203	3843203	339911WYWY pt.	3479002 pt	3479002 pt
3391121651	3841187	3841187	3391143116	3843209	3843209	339911WYWY pt.	3911002	3911002
3391121656	3829510	3829500 pt	3391143121	3843219	3843219	3399121	39141 pt	39141 pt
3391121661	3841196	3841196	3391143YWV	3843200	3843200	3399121101	3914111	3914111
3391121766	3841199	3841199	3391144W pt.	36990 pt	36990 pt	3399121106	3914131	3914131
3391121YWV pt	3829500	3829500 pt	3391144W pt.	38430	38430	3399121111	3914141	3914141
3391121YWV pt	3841100	3841100	3391144YWV pt.	3699000 pt	3699000 pt	3399121116	3914143	3914143
3391123	38412	38412	3391144YWV pt.	3843000	3843000	3399121121	3914153	3914153
3391123106	3841291	3841291	3391144YWV pt.	3699002 pt	3699002 pt	3399121126	3914175	3914170 pt
3391123111	3841293	3841293	3391144YWV pt	3843002	3843002	3399121YWV	3914100	3914100
3391123116	3841296	3841296	3391151	38511	38511	3399123 pt.	34790 pt	34790 pt
3391123YWV	3841200	3841200	3391151101	3851115	3851115	3399123101	39142 pt	39142 pt
339112W pt.	38290 pt	38290 pt	3391151106	3851117	3851117	3399123106	3914211	3914211
339112W pt.	38410	38410	3391151111	3851118	3851118	3399123111	3914235	3914235
339112WYWW pt.	3829000 pt	3829000 pt	3391151116	3851119	3851119	3399123116	3914241	3914241
339112WYWW pt.	3841000	3841000	3391151YWV	3851100	3851100	3399123121	3914273	3914273
339112WYWY pt.	3829002 pt	3829002 pt	3391153	38514	38514	3399123126	3479024	3479021 pt
339112WYWY pt.	3841002	3841002	3391153101	3851431	3851431	3399123YWV pt.	3479000 pt	3479000 pt
3391131	38421 pt	38421 pt	3391153106	3851445	3851445	3399123YWV pt.	3914200 pt	3914200 pt
339113101	3842101	3842101	3391153YWV	3851400	3851400	339912W pt.	34790 pt	34790 pt
339113104	3842102	3842102	3391155	38515	38515	339912W pt.	39140 pt	39140 pt
3391131207	3842104	3842104	3391155101	3851525	3851525	339912WYWW pt.	3479000 pt	3479000 pt
3391131211	3842105	3842105	3391155206	3851527	3851527	339912WYWW pt.	3914000 pt	3914000 pt
3391131214	3842106	3842106	3391155YWV	3851500	3851500	339912WYWY pt.	3479002 pt	3479002 pt
3391131217	3842107	3842107	3391157	38516	38516	339912WYWY pt.	3914002 pt	3914002 pt
3391131217	3842108	3842108	3391157101	3851612	3851612	3399131	39152	39152
3391131224	3842109	3842109	3391157206	3851613	3851613	3399131100 pt	3915200 pt	3915200
3391131227	3842110	3842110	3391157YWV	3851600	3851600	3399131100 pt	3915200 pt	3915211
3391131231	3842112	3842112	339115B	38517	38517	3399131100 pt	3915200 pt	3915233
3391131234	3842113	3842113	339115B101	3851702	3851702	3399133	39153	39153
3391131337	3842122	3842122	339115B106 pt	3851705 pt	3851703	3399133101	3915311	3915311
3391131341	3842123	3842123	339115B106 pt	3851705 pt	3851704	3399133206	3915312	3915312
3391131344	3842124	3842124	339115B111	3851706	3851706	3399133211	3915321	3915321
3391131347	3842126	3842126	339115B116	3851709	3851709	3399133316	3915331	3915331
3391131351	3842127	3842127	339115B121	3851719	3851719	3399133YWV	3915300	3915300
3391131354	3842129	3842129	339115B125	3851721	3851700 pt	3399135	39154	39154
3391131457	3842131	3842131	339115BYWV	3851700	3851700 pt	3399135100	3915400	3915400
3391131567	3842137	3842137	339115W	38510	38510	339913W	39150	39150
3391131571	3842165	3842165	339115WYWW	3851000	3851000	339913WYWW	3915000	3915000
3391131574	3842183	3842183	339115WYWY	3851002	3851002	339913WYWY	3915002	3915002
3391131577	3842185	3842185	3391160	80720	80720	3399140 pt.	34790 pt	34790 pt
3391131581	3842187	3842187	3391160100 pt	8072001	8072000 pt	3399140 pt.	34990 pt	34990 pt
3391131584	3842189	3842189	3391160100 pt	8072000 pt	8072000 pt	3399140 pt.	34990 pt	34990 pt
3391131587	3842191	3842191	3391160YWW	8072000 pt	8072000 pt	3399140 pt.	34998 pt	34998 pt
3391131591	3842197	3842197	3391160YWY	8072002	8072000 pt	3399140 pt.	39610	39610
3391131594	3842198	3842198	3399111	39111	39111	3399140111 pt	3961032 pt	3961031
3391131YWV	3842100 pt.	3842100 pt	3399111101	3911111	3911111	3399140111 pt	3961032 pt	3961041 pt
3391135	38423	38423	3399111206	3911112	3911112	3399140118	3499895	3499899 pt
3391135101	3842311	3842311	3399111311	3911114	3911114	3399140201	3961011	3961011
3391135106	3842321	3842321	3399111421 pt	3911121 pt.	3911131	3399140206 pt	3961022 pt	3961021
3391135111	3842322	3842322	3399111516	3911115	3911115	3399140206 pt	3961022 pt	3961041 pt
3391135116	3842351	3842351	3399111526	3911151	3911151	3399140216	3961051	3961051
3391135121	3842361	3842361	3399111531	3911198	3911198	3399140221	3961072	3961072
3391135126	3842373	3842373	3399111YWV	3911100	3911100	3399140226 pt	3479026 pt	3479021 pt
3391135YWV	3842300	3842300	3399113	39113	39113	3399140226 pt	3961098 pt	3961096
3391137	25991	25991	3399113101	3911311	3911311	3399140226 pt	3961098 pt	3961099
3391137100	2599100	2599100	3399113106 pt	3911315 pt.	3911321	3399140YWW pt	3479000 pt	3479000 pt
339113W pt.	25990 pt	25990 pt	3399113106 pt	3911315 pt.	3911341 pt	3399140YWW pt	3499000 pt	3499000 pt
339113W pt.	38420 pt	38420 pt	3399113111 pt	3911317 pt.	3911331	3399140YWW pt	3499800 pt	3499800 pt
339113WYWW pt.	2599000 pt	2599000 pt	3399113116 pt	3911398	3911398	3399140YWW pt	3961000	3961000
339113WYWW pt.	3842000 pt	3842000 pt	3399113YWV	3911300	3911300	3399140YWY pt	3479002 pt	3479002 pt
339113WYWY pt.	2599002 pt	2599002 pt	3399115 pt.	34790 pt	34790 pt	3399140YWY pt.	3499002 pt	3499002 pt
339113WYWY pt.	3842002 pt	3842002 pt				3399140YWY pt.	3961002	3961002
3391141 pt.	36992 pt	36992 pt						

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3399201	39491	39491	3399323261	3944441	3944441	3399501	39931	39931
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3399201111	3949114	3949114	3399323276 pt	3944499 pt	3944432	3399501311	3993114	3993114
3399201116	3949117	3949117	3399323346	3944436	3944436	3399501316	3993115	3993115
3399201121	3949118	3949118	3399323561	3944437	3944437	3399501321	3993116	3993116
3399201126	3949120	3949120	3399323566	3944443	3944443	3399501YVW	3993100	3993100
3399201131	3949121	3949121	3399325	39445	39445	3399503	39932	39932
3399201YVW	3949100	3949100	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203	39492	39492	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
3399203101	3949231	3949231	3399325111	3944516	3944516	3399503106 pt	3993203 pt	3993278 pt
3399203206	3949241	3949241	3399325116	3944519	3944519	3399503106 pt	3993203 pt	3993222
3399203311	3949245	3949245	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
3399203416	3949247	3949247	3399325226	3944523	3944523	3399503106 pt	3993203 pt	3993272 pt
3399203421	3949298	3949298	3399325231	3944525	3944525	3399503106 pt	3993203 pt	3993276 pt
3399203YVW	3949200	3949200	3399325236	3944530	3944530	3399503111 pt	3993205 pt	3993288 pt
3399205	39493	39493	3399325YVW	3944500	3944500	3399503111 pt	3993205 pt	3993232
3399205101	3949301	3949301	3399327	39446	39446	3399503111 pt	3993205 pt	3993262 pt
3399205106	3949302	3949302	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993278 pt
3399205YVW	3949300	3949300	3399327101 pt	3944615 pt	3944615	3399503116 pt	3993207 pt	3993242
3399207	39494	39494	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993252 pt
3399207101	3949401	3949401	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993272 pt
3399207111	3949411	3949402 pt	3399327216	3944627	3944627	3399503116 pt	3993207 pt	3993276 pt
3399207121	3949421	3949406 pt	3399327221	3944695	3944695	3399503116 pt	3993207 pt	3993288 pt
3399207131 pt	3949431 pt	3949402 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993262 pt
3399207131 pt	3949431 pt	3949403 pt	3399327YVW	3944600	3944600	3399503121 pt	3993209 pt	3993278 pt
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3399207141	3949441	3949406 pt	3399329100 pt	3944700	3944700	3399503126 pt	3993211 pt	3993272 pt
3399207151	3949451	3949406 pt	3399329100 pt	3944718 pt	3944712	3399503126 pt	3993211 pt	3993276 pt
3399207199 pt	3949499 pt	3949404 pt	3399329100 pt	3944718 pt	3944714	3399503126 pt	3993211 pt	3993288 pt
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3399207199 pt	3949499 pt	3949406 pt	3399329100 pt	3944718 pt	3944716	3399505	39933	39933
3399207YVW	3949400	3949400	339932W	39440 pt	39440 pt	33995050101	3993311	3993300 pt
3399209	39495	39495	339932WYVW	3944000 pt	3944000 pt	3399505106	3993351	3993300 pt
3399209101	3949511	3949511	339932WYVW	3944002 pt	3944002 pt	3399505YVW	3993300	3993300 pt
3399209106	3949515	3949515	3399411	39511	39511	339950W	39930	39930
3399209111	3949527	3949527	3399411101	3951102	3951102	339950WYVW	3993000	3993000
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993002	3993002
339920911A	3949569	3949569	3399411311	3951113	3951113	3399911	30534	30534
339920911F	3949575	3949575	3399411YVW	3951100	3951100	3399911111	3053415	3053415
339920911K	3949577	3949577	3399413	39512	39512	3399911121 pt	3053419 pt	3053411
339920911P	3949581	3949593 pt	3399413101	3951202	3951202	3399911121 pt	3053419 pt	3053418
339920911U	3949592	3949592	3399413206	3951206	3951206	3399911YVW	3053400	3053400
339920911Y	3949583	3949593 pt	3399413YVW	3951200	3951200	3399913	30535	30535
3399209121	3949530	3949530	3399415	39513	39513	3399913111	3053515	3053515
3399209126	3949536	3949536	3399415101	3951305	3951305	3399913221	3053524	3053531 pt
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339920912F	3949594	3949594	3399415111	3951313	3951313	3399913341	3053519	3053519
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339920912P	3949597	3949597	3399415YVW	3951300	3951300	3399913351 pt	3053529 pt	3053513
339920912U	3949599 pt	3949599	339941W	39510	39510	3399913351 pt	3053529 pt	3053521
339920912U pt	3949599 pt	3949599	339941WYVW	3951000	3951000	3399913351 pt	3053529 pt	3053531
3399209131	3949537	3949537	339941WYVW	3951002	3951002	3399913YVW	3053500	3053500
3399209136	3949538	3949538	3399421 pt	25311 pt	25311 pt	3399915	30536	30536
3399209141	3949539	3949539	3399421 pt	39523	39523	3399915111	3053621	3053621
3399209146	3949541	3949541	3399421101	3952310	3952310	3399915221	3053622	3053622
3399209151	3949551	3949551	3399421106	3952313	3952313	3399915231	3053625	3053625
3399209156 pt	3949561 pt	3949564	3399421111	3952322	3952322	3399915241	3053626	3053626
3399209156 pt	3949561 pt	3949586	3399421316	2531191 pt	2531198 pt	3399915251	3053630	3053630
3399209161	3949591	3949591	3399421YVW pt	2531100 pt	2531100 pt	3399915261	3053635	3053635
3399209166	3949585	3949585	3399421YVW pt	3952300	3952300	3399915YVW	3053600	3053600
3399209171	3949572	3949553 pt	3399423	39524 pt	39524 pt	3399917	30537	30537
3399209176	3949574	3949553 pt	3399423101	3952414	3952413 pt	3399917111	3053729	3053729
3399209181	3949576	3949553 pt	3399423206	3952421	3952419 pt	3399917121	3053748	3053748
3399209186	3949556	3949556	3399423YVW	3952400 pt	3952400 pt	3399917YVW	3053700	3053700
3399209191	3949571	3949571 pt	3399425	35799 pt	35799 pt	3399918	30538	30538
3399209193	3949565	3949571 pt	3399425000 pt	3579900 pt	3579900 pt	3399918111	3053810	3053810
3399209196	3949570	3949570 pt	3399425000 pt	3579930	3579900 pt	3399918121	3053813	3053813
3399209YVW	3949500	3949500	339942W pt	25310 pt	25310 pt	3399918131	3053815	3053815
339920W	39490	39490	339942W pt	35790 pt	35790 pt	3399918141	3053819	3053819
339920WYVW	3949000	3949000	339942W pt	39520 pt	39520 pt	3399918251	3053817	3053817
339920WYVW	3949002	3949002	339942W pt	395200 pt	395200 pt	3399918YVW	3053800	3053800
3399310	39420	39420	339942W pt	2531000 pt	2531000 pt	3399919	30539	30539
3399310106	3942012	3942012	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310111	3942021	3942021	339942WYVW pt	3952000 pt	3952000 pt	3399919121	3053973	3053973
3399310131	3942056	3942056	339942WYVW pt	2531002 pt	2531002 pt	3399919131	3053975	3053975
3399310216	3942043	3942043	339942WYVW pt	3579002 pt	3579002 pt	3399919141	3053977	3053977
3399310301	3942008	3942008	339942WYVW pt	3952002 pt	3952002 pt	3399919151 pt	3053989 pt	3053979
3399310321	3942053	3942053	339942WYVW pt	3953013	3953013	3399919151 pt	3053989 pt	3053981
3399310326	3942054	3942054	3399430101	3953015	3953015	3399919YVW	3053900	3053900
3399310YVW	3942000	3942000	3399430106	3953033	3953033	339991W	30530	30530
3399310YVW	3942002	3942002	3399430211	3953035	3953035	339991WYVW	3053000	3053000
3399321	39443 pt	39443 pt	3399430316	3953037	3953037	339991WYVW	3053002	3053002
3399321101	3944316	3944316 pt	3399430321	3953098	3953098	3399921	39311	39311
3399321106	3944326	3944346 pt	3399430YVW	3953000	3953000	3399921101 pt	3931141 pt	3931111
3399321111	3944381	3944381	3399430YVW	3953002	3953002	3399921101 pt	3931141 pt	3931115
3399321116	3944397	3944397	3399441	39551	39551	3399921106	3931151	3931151
3399321YVW	3944300 pt	3944300 pt	3399441101	3955115	3955115	3399921YVW	3931100	3931100
3399323	39444	39444	3399441201	3955110	3955110	3399923	39312	39312
3399323111	3944415	3944415	3399441211	3955120	3955120	3399923101	3931211	3931211
3399323116	3944421	3944421	3399441YVW	3955100	3955100	3399923106	3931251	3931251
3399323121	3944423	3944423	3399443	39552	39552	3399923YVW	3931200	3931200
3399323126	3944424	3944424	3399443100	3955200	3955200	3399925	39313	39313
3399323131	3944428	3944428	339944W	39550	39550	3399925101	3931311	3931311
3399323201	3944411	3944411	339944WYVW	3955000	3955000	3399925106	3931351	3931351
3399323206	3944413	3944413	339944WYVW	3955002	3955002	3399925YVW	3931300	3931300
3399323236	3944429	3944429						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
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			3399943YVW.....	3991200.....	3991200.....			
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3399935.....	39656.....	39656.....				339999H.....	39999 pt.....	39999 pt.....
3399935101.....	3965620.....	3965620.....	3399951.....	39951.....	39951.....	339999H101.....	3999907.....	3999907.....
3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
3399935111.....	3965633.....	3965633.....	3399951206.....	3995115.....	3995115.....	339999H111.....	3999951.....	3999951.....
3399935116.....	3965651.....	3965651.....	3399951YVW.....	3995100.....	3995100.....	339999H121.....	3999981.....	3999981.....
3399935121.....	3965671.....	3965671.....				339999H151 pt.....	3999997 pt.....	3999913 pt.....
3399935126 pt.....	3965691 pt.....	3965681.....	3399953.....	39952.....	39952.....	339999H151 pt.....	3999997 pt.....	3999924.....
3399935126 pt.....	3965691 pt.....	3965689.....	3399953101.....	3995211.....	3995211.....	339999H151 pt.....	3999997 pt.....	3999944 pt.....
3399935YVW.....	3965600.....	3965600.....	3399953106.....	3995252.....	3995252.....	339999H151 pt.....	3999997 pt.....	3999999 pt.....
			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
339993W pt.....	31310 pt.....	31310 pt.....				339999W pt.....	24990 pt.....	24990 pt.....
			3399955.....	39953.....	39953.....	339999W pt.....	39990 pt.....	39990 pt.....
339993W pt.....	39650.....	39650.....	3399955100 pt.....	3995300 pt.....	3995300.....	339999WYWWW pt.....	2499000 pt.....	2499000 pt.....
339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYVW pt.....	3999000 pt.....	3999000 pt.....
339993WYWY pt.....	3131002 pt.....	3131002 pt.....	3399955100 pt.....	3995300 pt.....	3995331.....	339999WYVW pt.....	2499002 pt.....	2499002 pt.....
339993WYVW pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYVW pt.....	3999002 pt.....	3999002 pt.....
			3399955100 pt.....	3995300 pt.....	3995393.....			
3399941 pt.....	23924 pt.....	23924 pt.....						

Burial Casket Manufacturing

1997

Issued July 1999

EC97M-3399Q

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall coordination of the publication process.

Kim Credito, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Burial Casket Manufacturing

1997

Issued July 1999

EC97M-3399Q

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250 employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special

census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the

manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339995	Burial casket mfg	163	177	6 962	212 491	5 194	10 613	145 475	882 922	384 379	1 271 184	28 430
399500	Burial caskets	N	177	6 962	212 491	5 194	10 613	145 475	882 922	384 379	1 271 184	28 430

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339995, BURIAL CASKET MFG												
United States	-	177	53	6 962	212 491	5 194	10 613	145 475	882 922	384 379	1 271 184	28 430
Alabama	-	7	4	141	4 548	105	245	3 007	13 263	14 259	27 373	407
California	3	11	1	110	2 921	86	180	1 959	7 357	3 089	10 496	137
Illinois	4	8	4	159	4 290	124	248	3 157	12 231	8 287	20 649	680
Indiana	-	20	15	2 459	78 914	1 643	3 191	48 555	315 387	130 840	444 495	11 930
North Carolina	1	8	2	167	4 427	130	260	2 364	7 464	9 506	17 359	422
Pennsylvania	-	10	6	977	28 230	766	1 706	21 758	59 245	36 536	95 500	3 614
Texas	1	8	2	115	2 441	85	180	1 680	9 026	6 021	14 884	98

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339995, BURIAL CASKET MFG		339995, BURIAL CASKET MFG—Con.	
Companies ¹ number..	163	Value added \$1,000..	882 922
All establishments number..	177	Total inventories, beginning of year \$1,000..	124 056
Establishments with 1 to 19 employees number..	124	Finished goods inventories, beginning of year \$1,000..	73 661
Establishments with 20 to 99 employees number..	36	Work-in-process inventories, beginning of year \$1,000..	20 534
Establishments with 100 employees or more number..	17	Materials and supplies inventories, beginning of year \$1,000..	29 861
All employees number..	6 962	Total inventories, end of year \$1,000..	118 837
Total compensation ² \$1,000..	261 824	Finished goods inventories, end of year \$1,000..	70 325
Annual payroll \$1,000..	212 491	Work-in-process inventories, end of year \$1,000..	19 987
Total fringe benefits \$1,000..	49 333	Materials and supplies inventories, end of year \$1,000..	28 525
Production workers, average for year number..	5 194	Gross book value of total assets at beginning of year \$1,000..	411 413
Production workers on March 15 number..	5 263	Total capital expenditures (new and used) \$1,000..	28 430
Production workers on May 15 number..	5 302	Capital expenditures for buildings and other structures (new and used) \$1,000..	4 636
Production workers on August 15 number..	5 107	Capital expenditures for machinery and equipment (new and used) \$1,000..	23 794
Production workers on November 15 number..	5 104	Total retirements ² \$1,000..	15 676
Production-worker hours 1,000..	10 613	Gross book value of total assets at end of year \$1,000..	424 167
Production-worker wages \$1,000..	145 475	Total depreciation during year ² \$1,000..	26 951
Total cost of materials \$1,000..	384 379	Total rental payments ² \$1,000..	6 387
Cost of materials, parts, containers, etc., consumed \$1,000..	348 878	Buildings and other structures rental payments ² \$1,000..	3 854
Cost of resales \$1,000..	23 072	Machinery and equipment rental payments ² \$1,000..	2 533
Cost of fuels \$1,000..	4 139	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	1 836
Cost of purchased electricity \$1,000..	8 194	Response coverage ratio ⁴ percent..	84
Cost of contract work \$1,000..	96	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	9 584
Quantity of electricity purchased for heat and power 1,000 kWh..	158 792	Response coverage ratio ⁴ percent..	84
Quantity of electricity generated less sold for heat and power 1,000 kWh..	-	Cost of purchased communications services ³ \$1,000..	1 046
Total value of shipments \$1,000..	1 271 184	Response coverage ratio ⁴ percent..	84
Primary products value of shipments \$1,000..	D	Cost of purchased legal services ³ \$1,000..	1 634
Secondary products value of shipments \$1,000..	D	Response coverage ratio ⁴ percent..	84
Total miscellaneous receipts \$1,000..	53 894	Cost of purchased accounting and bookkeeping services ³ \$1,000..	786
Value of resales \$1,000..	32 441	Response coverage ratio ⁴ percent..	84
Contract receipts \$1,000..	D	Cost of purchased advertising services ³ \$1,000..	562
Other miscellaneous receipts \$1,000..	D	Response coverage ratio ⁴ percent..	84
Primary products specialization ratio percent..	D	Cost of purchased software and other data processing services ³ \$1,000..	320
Value of primary products shipments made in all industries \$1,000..	1 219 469	Response coverage ratio ⁴ percent..	84
Value of primary products shipments made in this industry \$1,000..	D	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	720
Value of primary products shipments made in other industries \$1,000..	D	Response coverage ratio ⁴ percent..	84
Coverage ratio percent..	D		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339995, BURIAL CASKET MFG												
All establishments	-	177	53	6 962	212 491	5 194	10 613	145 475	882 922	384 379	1 271 184	28 430
Establishments with 1 to 4 employees	9	68	-	117	2 981	106	185	2 326	10 982	5 629	16 745	522
Establishments with 5 to 9 employees	8	28	-	174	4 405	136	270	3 436	14 570	9 714	24 430	745
Establishments with 10 to 19 employees	2	28	-	395	9 952	268	514	6 196	24 090	18 471	42 967	1 129
Establishments with 20 to 49 employees	2	25	25	743	19 800	545	1 145	13 361	49 701	47 877	97 223	1 463
Establishments with 50 to 99 employees	-	11	11	824	20 379	605	1 250	14 427	51 788	42 880	94 464	2 833
Establishments with 100 to 249 employees	-	10	10	1 649	52 030	1 308	2 799	36 011	318 573	131 174	453 950	5 551
Establishments with 250 to 499 employees	-	5	5	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	-	2	2	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	90	-	286	7 036	237	420	5 453	26 134	13 355	39 751	1 300

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339995	Burial casket mfg	177	6 962	212 491	5 194	10 613	145 475	882 922	384 379	1 271 184	28 430
3399951	Metal burial caskets and coffins completely lined and trimmed, adult sizes only	43	4 082	126 949	2 928	5 901	83 356	578 024	216 539	796 403	16 103
3399953	Wood burial caskets and coffins, completely lined and trimmed, adult sizes only	17	1 867	54 464	1 485	3 133	41 120	216 253	80 118	298 169	6 483
3399955	Other burial caskets and coffins and metal vaults	17	605	21 289	455	1 020	13 654	56 487	71 468	127 932	4 346

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339995	Burial caskets	N	X	X	1 219 469	N	X	X	1 020 875
3399951	Metal burial caskets and coffins completely lined and trimmed, adult sizes only	N	X	X	748 867	N	X	X	675 694
33999511	Steel burial caskets and coffins (excluding stainless steel)	N	X	X	570 346	N	X	X	N
3399951101	Steel burial caskets and coffins (excluding stainless steel) .. thousands ..	41	X	1 224.7	570 346	63	X	978.6	473 216
33999512	Other metal burial caskets and coffins (stainless steel, bronze, copper, etc) ..	N	X	X	178 521	N	X	X	N
3399951206	Other metal burial caskets and coffins (stainless steel, bronze, copper, etc) .. thousands ..	22	X	173.0	178 521	35	X	P205.5	178 679
3399951Y	Metal caskets and coffins completely lined and trimmed, adult sizes only, nsk ..	N	X	X	-	N	X	X	N
3399951YWV	Metal caskets and coffins completely lined and trimmed, adult sizes only, nsk ..	N	X	X	-	N	X	X	23 799
3399953	Wood burial caskets and coffins, completely lined and trimmed, adult sizes only ..	N	X	X	317 604	N	X	X	222 871
33999531	Wood burial caskets and coffins, completely lined and trimmed, adult sizes only ..	N	X	X	317 604	N	X	X	N
3399953101	Cloth covered wood (pressboard, corrugated fiberboard, and softwood) burial caskets and coffins, completely lined and trimmed, adult sizes only .. thousands ..	16	X	128.6	15 485	28	X	P105.2	15 976
3399953106	Hardwood (including pine) burial caskets and coffins, completely lined and trimmed, adult sizes only .. thousands ..	28	X	287.0	302 119	44	X	P273.0	201 707
3399953Y	Wood burial caskets and coffins, completely lined and trimmed, adult sizes only, nsk ..	N	X	X	-	N	X	X	N
3399953YWV	Wood burial caskets and coffins, completely lined and trimmed, adult sizes only, nsk ..	N	X	X	-	N	X	X	5 188
3399955	Other burial caskets and coffins and metal vaults ..	N	X	X	107 560	N	X	X	94 022
33999551	Other burial caskets and coffins and metal vaults ..	N	X	X	107 560	N	X	X	N
3399955100	Other burial caskets and coffins and metal vaults .. thousands ..	27	X	352.0	107 560	N	X	X	N
339995W	Burial caskets, nsk, total ..	N	X	X	45 438	N	X	X	28 288
339995WY	Burial casket manufacturing, nsk, total ..	N	X	X	45 438	N	X	X	N
339995WYWV	Burial casket manufacturing, nsk, for nonadministrative-record establishments ..	N	X	X	8 734	N	X	X	7 897
339995WYWY	Burial casket manufacturing, nsk, for administrative-record establishments ..	N	X	X	36 704	N	X	X	20 391

Additional information is available for this item; see Appendix F.

@ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399951	METAL BURIAL CASKETS AND COFFINS COMPLETELY LINED AND TRIMMED, ADULT SIZES ONLY		
	United States	748 867	675 694
	Alabama	6 281	6 989
	Indiana	347 799	272 371
	Pennsylvania	31 506	33 653
	Texas	7 980	8 010
3399953	WOOD BURIAL CASKETS AND COFFINS, COMPLETELY LINED AND TRIMMED, ADULT SIZES ONLY		
	United States	317 604	222 871
	California	2 182	5 346
	Indiana	24 270	13 983
	Massachusetts	11 500	7 871
	Pennsylvania	60 200	43 743

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399955	OTHER BURIAL CASKETS AND COFFINS AND METAL VAULTS		
	United States	107 560	94 022
	Georgia	2 262	N
	Indiana	49 050	34 323
	Pennsylvania.....	2 163	N

Additional information is available for this item; see Appendix F.
 @ Additional data are available for this item in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339995	BURIAL CASKET MFG				
31320007	Cotton, wool, manmade fiber fabrics, etc.	X	52 343	X	55 148
32100019	Rough and dressed lumber	X	43 412	X	39 981
33251003	Metal casket and casket shell hardware	X	50 510	X	59 782
33200045	Other fabricated metal products (except castings and forgings)	X	12 380	X	11 754
33100035	Castings (rough and semifinished)	X	D	X	N
33210001	Forgings	X	D	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	X	92 660	X	68 991
331000AJ	Nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	X	D	X	18 999
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X	20 936	X	21 076
00970099	All other materials and components, parts, containers, and supplies	X	27 518	X	20 043
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	30 218	X	43 865

Additional information is available for this item; see Appendix F.
 Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339995 BURIAL CASKET MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing burial caskets, cases, and vaults (except concrete).

The data published with NAICS code 339995 include the following SIC industry:

3995 Burial caskets

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
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3391121661	3841196	3841196	339114WYWW pt.	3843000 pt.	3843000 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114WYWW pt.	3699002 pt.	3699002 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114WYWY pt.	3843002	3843002	3399121116	3914143	3914143
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			3391151101	3851115	3851115	3399121126	3914175	3914170 pt
3391123	38412	38412	3391151106	3851117	3851117	3399121YWV	3914100	3914100
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3391123116	3841296	3841296	3391151YWV	3851100	3851100	3399123101	39142 pt.	39142 pt
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						3399123121	3914273	3914273
339112W pt.	38410	38410				3399123126	3479024	3479021 pt
339112WYWW pt.	3829000 pt.	3829000 pt				3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWW pt.	3841000	3841000				3399123YWV pt.	3914200 pt.	3914200 pt
339112WYWY pt.	3829002 pt.	3829002 pt						
339112WYWY pt.	3841002	3841002						
3391131	38421 pt.	38421 pt						
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3399201YVW	3949100	3949100	3399325101	3944511	3944511	3399503101 pt	3993201 pt	3993212
3399203	39492	39492	3399325106	3944513	3944513	3399503101 pt	3993201 pt	3993262 pt
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3399203311	3949245	3949245	3399325212	3944521	3944521	3399503106 pt	3993203 pt	3993252 pt
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3399207	39494	39494	3399327206	3944621	3944621	3399503116 pt	3993207 pt	3993252 pt
3399207101	3949401	3949401	3399327211	3944624	3944624	3399503116 pt	3993207 pt	3993272 pt
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3399207131 pt	3949431 pt	3949402 pt	3399327226	3944696	3944696	3399503121 pt	3993209 pt	3993262 pt
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3399209111	3949527	3949527	3399411101	3951102	3951102	339950WYVW	3993000	3993000
3399209116	3949528	3949528	3399411206	3951104	3951104	339950WYVW	3993002	3993002
339920911A	3949569	3949569	3399411311	3951113	3951113	3399911	30534	30534
339920911F	3949575	3949575	3399411YVW	3951100	3951100	3399911111	3053415	3053415
339920911K	3949577	3949577	3399413	39512	39512	3399911121 pt	3053419 pt	3053411
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3399209181	3949576	3949553 pt	3399423206	3952421	3952419 pt	3399917121	3053748	3053748
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339920WYVW	3949000	3949000	339942W pt	39520 pt	39520 pt	3399918251	3053817	3053817
339920WYVW	3949002	3949002	339942W pt	395200 pt	395200 pt	3399918YVW	3053800	3053800
3399310	39420	39420	339942W pt	2531000 pt	2531000 pt	3399919	30539	30539
3399310106	3942012	3942012	339942WYVW pt	3579000 pt	3579000 pt	3399919111	3053970	3053970
3399310111	3942021	3942021	339942WYVW pt	3952000 pt	3952000 pt	3399919121	3053973	3053973
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3399310216	3942043	3942043	339942WYVW pt	3579002 pt	3579002 pt	3399919141	3053977	3053977
3399310301	3942008	3942008	339942WYVW pt	3952002 pt	3952002 pt	3399919151 pt	3053989 pt	3053979
3399310321	3942053	3942053	339942WYVW pt	3953013	3953013	3399919151 pt	3053989 pt	3053981
3399310326	3942054	3942054	3399430101	3953015	3953015	3399919YVW	3053900	3053900
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3399323	39444	39444	3399441201	3955110	3955110	3399923	39312	39312
3399323111	3944415	3944415	3399441211	3955120	3955120	3399923101	3931211	3931211
3399323116	3944421	3944421	3399441YVW	3955100	3955100	3399923106	3931251	3931251
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3399323126	3944424	3944424	3399443100	3955200	3955200	3399925	39313	39313
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All Other Miscellaneous Manufacturing

1997

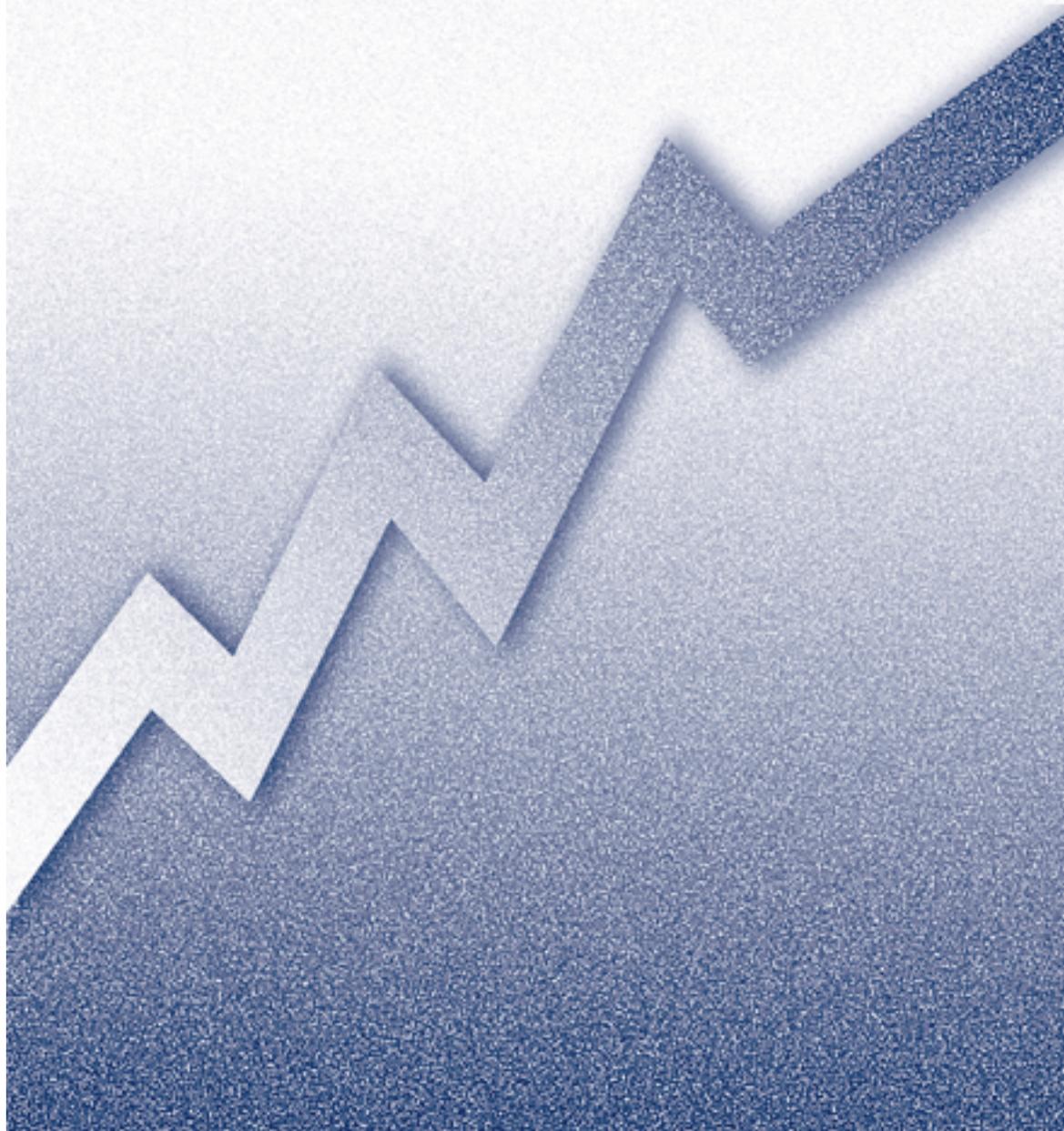
Issued October 1999

EC97M-3399R

1997 Economic Census

Manufacturing

Industry Series



U S C E N S U S B U R E A U

Helping You Make Informed Decisions

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU



ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

All Other Miscellaneous Manufacturing

1997

Issued October 1999

EC97M-3399R

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339999	All other miscellaneous mfg ...	2 635	2 691	72 632	1 763 913	51 769	103 594	953 423	4 351 002	3 712 890	8 046 078	359 766
249950	Wood products, n.e.c. (pt)	N	449	13 740	270 999	10 953	20 882	182 613	641 106	587 978	1 227 261	27 799
399980	Manufacturing industries, n.e.c. (pt)	N	2 242	58 892	1 492 914	40 816	82 712	770 810	3 709 896	3 124 912	6 818 817	331 967

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339999, ALL OTHER MISCELLANEOUS MFG												
United States	2	2 691	672	72 632	1 763 913	51 769	103 594	953 423	4 351 002	3 712 890	8 046 078	359 766
Alabama	-	23	6	1 081	23 176	733	1 472	10 858	56 511	58 901	116 067	3 753
Arizona	3	52	18	949	23 283	645	2 237	10 133	48 102	34 491	81 721	3 280
Arkansas	-	32	13	2 221	39 985	1 644	3 247	23 554	115 076	81 120	198 747	4 159
California	2	399	120	10 173	252 024	7 395	13 454	135 191	636 731	502 751	1 142 389	52 950
Colorado	5	49	10	539	13 409	298	487	5 819	34 697	14 148	49 067	1 533
Florida	3	145	25	1 747	36 005	1 262	2 063	21 755	85 923	63 009	150 460	4 737
Georgia	2	53	9	1 664	34 087	1 391	2 692	23 181	88 148	56 724	149 356	5 589
Idaho	-	14	3	157	2 973	107	165	1 336	7 892	4 436	12 691	527
Illinois	1	123	40	6 164	164 363	4 522	8 973	87 392	383 256	333 789	710 638	23 256
Indiana	-	50	17	1 626	37 104	1 304	2 190	23 518	98 758	73 645	173 488	4 842
Kentucky	7	14	6	337	8 427	247	412	4 660	31 447	47 233	78 627	2 735
Louisiana	2	12	1	102	1 753	74	97	1 020	2 860	1 983	4 847	225
Maine	2	24	6	361	6 690	275	428	3 828	18 121	11 524	28 399	1 091
Maryland	1	35	9	837	15 970	633	1 151	8 946	39 430	35 280	74 238	4 458
Massachusetts	1	61	15	2 815	92 558	1 462	2 797	41 112	196 409	183 138	379 649	7 701
Michigan	1	83	13	1 059	29 298	759	1 582	17 048	66 296	45 484	112 319	6 277
Minnesota	1	61	9	1 783	27 459	975	1 132	12 902	81 946	45 459	126 392	4 755
Mississippi	-	14	4	882	21 044	758	1 375	13 319	51 261	43 854	95 203	2 569
Missouri	1	48	14	1 343	24 935	955	1 547	13 470	52 942	37 190	90 365	3 264
Nevada	-	35	12	2 905	96 288	1 294	2 643	23 003	204 684	270 166	475 401	71 717
New Hampshire	1	18	3	314	8 201	236	394	3 721	18 054	9 262	27 216	774
New Jersey	1	65	19	1 492	41 048	978	1 752	17 113	90 066	70 725	161 787	10 750
New Mexico	7	23	4	273	8 274	182	311	4 458	19 717	13 222	32 636	1 068
New York	4	241	68	5 663	142 392	4 056	7 520	82 334	310 119	208 557	518 451	15 887
North Carolina	2	75	31	3 816	95 402	2 866	4 991	56 193	291 085	321 968	598 877	30 372
Ohio	-	95	18	2 587	59 240	2 017	3 899	33 697	171 177	219 282	394 874	22 867
Oklahoma	1	23	6	665	10 209	434	638	5 961	47 564	32 402	79 183	696
Oregon	5	59	9	831	18 315	410	696	7 587	39 552	32 863	72 217	3 691
Pennsylvania	1	98	27	3 790	104 557	2 733	5 174	64 671	268 636	195 995	458 069	15 299
Rhode Island	6	32	7	582	12 842	430	711	7 292	27 559	18 239	45 594	1 238
South Carolina	1	19	3	310	5 423	259	282	3 126	14 259	7 719	22 090	600
Tennessee	2	41	8	1 692	36 217	1 308	2 401	23 255	68 822	64 699	133 278	5 950
Texas	4	189	41	4 721	104 476	3 633	6 984	63 510	277 862	226 114	502 642	16 513
Virginia	-	37	12	1 914	49 771	1 633	2 927	31 681	110 918	113 895	223 193	3 043
Washington	3	69	13	664	13 816	496	840	8 378	32 267	25 678	55 628	2 434
Wisconsin	-	65	16	1 952	47 512	1 365	10 598	25 316	150 728	114 917	264 554	12 494

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
339999, ALL OTHER MISCELLANEOUS MFG		339999, ALL OTHER MISCELLANEOUS MFG—Con.	
Companies ¹ number..	2 635	Value added \$1,000..	4 351 002
All establishments number..	2 691	Total inventories, beginning of year \$1,000..	1 359 565
Establishments with 1 to 19 employees number..	2 019	Finished goods inventories, beginning of year \$1,000..	591 338
Establishments with 20 to 99 employees number..	521	Work-in-process inventories, beginning of year \$1,000..	181 572
Establishments with 100 employees or more number..	151	Materials and supplies inventories, beginning of year \$1,000..	586 655
All employees number..	72 632	Total inventories, end of year \$1,000..	1 404 368
Total compensation ² \$1,000..	2 132 822	Finished goods inventories, end of year \$1,000..	595 987
Annual payroll \$1,000..	1 763 913	Work-in-process inventories, end of year \$1,000..	194 737
Total fringe benefits \$1,000..	368 909	Materials and supplies inventories, end of year \$1,000..	613 644
Production workers, average for year number..	51 769	Gross book value of total assets at beginning of year \$1,000..	2 213 219
Production workers on March 12 number..	50 740	Total capital expenditures (new and used) \$1,000..	359 766
Production workers on May 12 number..	51 331	Capital expenditures for buildings and other structures (new and used) \$1,000..	94 345
Production workers on August 12 number..	52 169	Capital expenditures for machinery and equipment (new and used) \$1,000..	265 421
Production workers on November 12 number..	52 836	Total retirements ² \$1,000..	128 758
Production-worker hours 1,000..	103 594	Gross book value of total assets at end of year \$1,000..	2 444 227
Production-worker wages \$1,000..	953 423	Total depreciation during year ² \$1,000..	210 049
Total cost of materials \$1,000..	3 712 890	Total rental payments ² \$1,000..	129 252
Cost of materials, parts, containers, etc., consumed \$1,000..	3 195 622	Buildings and other structures rental payments ² \$1,000..	68 163
Cost of resales \$1,000..	328 889	Machinery and equipment rental payments ² \$1,000..	61 089
Cost of fuels \$1,000..	21 461	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	6 387
Cost of purchased electricity \$1,000..	53 729	Response coverage ratio ⁴ percent..	57
Cost of contract work \$1,000..	113 189	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	18 898
Quantity of electricity purchased for heat and power 1,000 kWh..	820 322	Response coverage ratio ⁴ percent..	57
Quantity of electricity generated less sold for heat and power 1,000 kWh..	—	Cost of purchased communications services ³ \$1,000..	14 998
Total value of shipments \$1,000..	8 046 078	Response coverage ratio ⁴ percent..	57
Primary products value of shipments \$1,000..	7 099 638	Cost of purchased legal services ³ \$1,000..	10 140
Secondary products value of shipments \$1,000..	316 150	Response coverage ratio ⁴ percent..	57
Total miscellaneous receipts \$1,000..	630 290	Cost of purchased accounting and bookkeeping services ³ \$1,000..	5 989
Value of resales \$1,000..	495 168	Response coverage ratio ⁴ percent..	57
Contract receipts \$1,000..	97 796	Cost of purchased advertising services ³ \$1,000..	38 131
Other miscellaneous receipts \$1,000..	37 326	Response coverage ratio ⁴ percent..	57
Primary products specialization ratio percent..	95	Cost of purchased software and other data processing services ³ \$1,000..	7 598
Value of primary products shipments made in all industries \$1,000..	7 396 119	Response coverage ratio ⁴ percent..	57
Value of primary products shipments made in this industry \$1,000..	7 099 638	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	4 302
Value of primary products shipments made in other industries \$1,000..	296 481	Response coverage ratio ⁴ percent..	57
Coverage ratio percent..	95		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339999, ALL OTHER MISCELLANEOUS MFG												
All establishments	2	2 691	672	72 632	1 763 913	51 769	103 594	953 423	4 351 002	3 712 890	8 046 078	359 766
Establishments with 1 to 4 employees	8	1 156	—	2 164	42 452	1 724	3 705	26 042	93 706	70 772	164 277	6 446
Establishments with 5 to 9 employees	5	461	—	3 069	65 444	2 270	3 375	38 622	140 577	110 299	251 936	8 765
Establishments with 10 to 19 employees	3	402	—	5 412	119 288	3 975	6 172	68 271	290 653	210 865	499 861	15 443
Establishments with 20 to 49 employees	3	364	364	11 473	266 968	8 082	13 872	143 201	612 806	477 588	1 088 521	43 193
Establishments with 50 to 99 employees	2	157	157	10 929	272 723	7 582	22 208	145 135	681 129	505 858	1 184 960	36 539
Establishments with 100 to 249 employees	1	103	103	15 351	374 763	10 797	19 914	199 967	940 365	740 856	1 679 213	77 060
Establishments with 250 to 499 employees	2	31	31	11 067	269 332	8 088	15 902	150 276	637 936	725 682	1 355 372	47 640
Establishments with 500 to 999 employees	—	13	13	7 801	192 723	5 967	11 653	110 051	559 356	476 071	1 027 575	41 663
Establishments with 1,000 to 2,499 employees	—	4	4	5 366	160 220	3 284	6 793	71 858	394 474	394 899	794 363	83 017
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	1 074	—	3 937	68 726	3 020	3 896	40 737	156 834	116 779	274 458	11 459

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
339999	All other miscellaneous mfg	2 691	72 632	1 763 913	51 769	103 594	953 423	4 351 002	3 712 890	8 046 078	359 766
3399991	Chemical fire-extinguishing equipment and parts	23	3 096	111 728	1 748	3 559	46 632	326 728	387 000	702 965	17 921
3399993	Coin-operated amusement machines	42	5 584	172 666	3 090	6 250	59 140	393 507	511 112	900 566	83 837
3399995	Candles (including tapers)	107	8 536	189 882	6 007	10 947	97 306	493 392	472 405	968 326	52 671
3399997	Umbrellas and parasols (including parts)	12	499	9 986	393	586	5 428	25 900	17 546	42 915	1 366
3399999	Feathers, plumes, and artificial flowers	66	3 344	64 659	2 606	4 679	41 080	182 144	134 147	309 232	3 907

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339999	All other miscellaneous fabrications	N	X	X	7 396 119	N	X	X	N
3399991	Chemical fire-extinguishing equipment and parts	N	X	X	543 864	N	X	X	462 142
33999911	Chemical fire-extinguishing equipment and parts	N	X	X	533 471	N	X	X	N
3399991101	Hand portable carbon dioxide fire extinguishers	7	X	X	29 609	8	X	X	13 240
3399991106	Hand portable dry chemical fire extinguishers	7	X	X	200 143	9	X	X	148 370
3399991111	Other hand portable fire extinguishers (including foam, pressurized water, and halogenated agents)	11	X	X	67 684	8	X	X	91 558
3399991116	Fixed fire-extinguishing systems, including inert gas, dry and wet chemical, and other chemical fire-extinguishing equipment	10	X	X	137 733	12	X	X	85 608
3399991121	Parts and attachments for chemical fire-extinguishing equipment	8	X	X	98 302	7	X	X	21 913
3399991Y	Chemical fire-extinguishing equipment and parts, nsk	N	X	X	10 393	N	X	X	N
3399991YVW	Chemical fire-extinguishing equipment and parts, nsk	N	X	X	10 393	N	X	X	101 453
3399993	Coin-operated amusement machines	N	X	X	866 254	N	X	X	578 217
33999931	Coin-operated amusement machines	N	X	X	863 216	N	X	X	N
3399993101	Coin-operated arcade and amusement center type electronic games	26	X	X	395 360	31	X	X	339 573
3399993106	Other coin-operated amusement machines, including nonelectronic arcade games and parts for all arcade games	15	X	X	467 856	21	X	X	235 952
3399993Y	Coin-operated amusement machines, nsk	N	X	X	3 038	N	X	X	N
3399993YVW	Coin-operated amusement machines, nsk	N	X	X	3 038	N	X	X	2 692
3399995	Candles (including tapers)	N	X	X	950 679	N	X	X	366 182
33999951	Candles (including tapers)	N	X	X	950 679	N	X	X	N
3399995100	Candles (including tapers)	112	X	X	950 679	63	X	X	366 182
3399997	Umbrellas and parasols (including parts)	N	X	X	70 313	N	X	X	56 352
33999971	Umbrellas and parasols (including parts)	N	X	X	70 313	N	X	X	N
3399997100	Umbrellas and parasols (including parts)	20	X	X	70 313	20	X	X	56 352
3399999	Feathers, plumes, and artificial flowers	N	X	X	242 531	N	X	X	254 456
33999991	Feathers, plumes, and artificial flowers	N	X	X	221 476	N	X	X	N
3399999101	Artificial trees, all types (metal, plastics, etc), including Christmas	18	X	X	120 173	11	X	X	101 958
3399999106	Artificial flowers, fruits, and wreaths	24	X	X	87 252	N	X	X	N
3399999111	Feathers and plumes	5	X	X	14 051	9	X	X	40 712
3399999Y	Feathers, plumes, and artificial flowers, nsk	N	X	X	21 055	N	X	X	N
3399999YVW	Feathers, plumes, and artificial flowers, nsk	N	X	X	21 055	N	X	X	55 367
339999C	Mirror and picture frames	N	X	X	1 075 961	N	X	X	N
339999C1	Wood frames for mirrors and pictures	N	X	X	472 435	N	X	X	N
339999C101	Wood-frames for mirrors and pictures	135	X	X	472 435	122	X	X	287 489
339999C2	Wood-framed pictures	N	X	X	260 573	N	X	X	N
339999C206	Wood-framed pictures	66	X	X	260 573	60	X	X	171 926
339999C3	Metal frames for mirrors and pictures, and framed pictures other than wood (metal, plastics, fiber)	N	X	X	209 695	N	X	X	N
339999C311	Metal frames for mirrors and pictures	29	X	X	73 384	29	X	X	105 597
339999C316	Framed pictures other than wood (metal, plastics, fiber)	24	X	X	136 311	28	X	X	59 084
339999CY	Mirror and picture frames, nsk	N	X	X	133 258	N	X	X	N
339999CYVW	Mirror and picture frames, nsk	N	X	X	133 258	N	X	X	N
339999H	Miscellaneous fabricated products, nec	N	X	X	2 160 568	N	X	X	N
339999H1	Miscellaneous fabricated products, nec	N	X	X	2 107 469	N	X	X	N
339999H101	Hair clippers, for human use, hand and electric	6	X	X	D	5	X	X	117 047
339999H106	Barber and beauty shop furniture and equipment, except barber and beauty chairs	18	X	X	D	N	X	X	N
339999H111	Christmas tree ornaments and decorations (except glass and electrical)	31	X	X	83 937	37	X	X	131 734
339999H121	Potpourri (dried and chemically preserved flowers, foliage, fruits, and vines)	34	X	X	121 735	38	X	X	101 288
339999H151	Miscellaneous fabricated products, made primarily of other material, including products made from a combination of materials	398	X	X	1 659 565	N	X	X	N

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
339999	All other miscellaneous fabrications—Con.								
339999H	Miscellaneous fabricated products, nec—Con.								
339999HY	Miscellaneous fabricated products, nec, nsk	N	X	X	53 099	N	X	X	N
339999HYWV	Miscellaneous fabricated products, nec, nsk	N	X	X	53 099	N	X	X	N
339999W	Miscellaneous products, nsk	N	X	X	1 485 949	N	X	X	N
339999WY	All other miscellaneous manufacturing, nsk, total	N	X	X	1 485 949	N	X	X	N
339999WYWW	All other miscellaneous manufacturing, nsk, for nonadministrative-record establishments	N	X	X	1 243 671	N	X	X	N
339999WYWY	All other miscellaneous manufacturing, nsk, for administrative-record establishments	N	X	X	242 278	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
3399991	CHEMICAL FIRE-EXTINGUISHING EQUIPMENT AND PARTS		
	United States	543 864	462 142
	Illinois	24 315	N
3399993	COIN-OPERATED AMUSEMENT MACHINES		
	United States	866 254	578 217
	Arizona	13 636	N
	California	23 215	65 200
	Illinois	246 567	192 175
3399995	CANDLES (INCLUDING TAPERS)		
	United States	950 679	366 182
	Arkansas	16 459	N
	California	75 762	41 141
	Michigan	2 990	N
	Minnesota	5 454	N
	Missouri	31 214	8 533
	New Jersey	24 863	13 711
	New York	58 161	29 811
	Pennsylvania	5 289	5 757
	Texas	92 251	21 890
	Washington	3 909	N
3399997	UMBRELLAS AND PARASOLS (INCLUDING PARTS)		
	United States	70 313	56 352
	California	9 324	16 269
	New Jersey	16 543	N
3399999	FEATHERS, PLUMES, AND ARTIFICIAL FLOWERS		
	United States	242 531	254 456
	California	34 365	22 306
	Florida	7 021	N
	New York	27 475	54 359
	North Carolina	11 730	N
	Ohio	14 534	N
	Texas	25 219	N
	Wisconsin	2 165	3 653

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
339999C	MIRROR AND PICTURE FRAMES		
	United States	1 075 961	N
	Alabama	15 057	N
	Arkansas	104 110	N
	California	252 854	N
	Colorado	4 587	N
	Connecticut	4 161	N
	Florida	10 358	N
	Georgia	4 228	N
	Illinois	70 298	N
	Kansas	5 110	N
	Maryland	6 604	N
	Massachusetts	33 282	N
	Michigan	10 824	N
	Missouri	12 179	N
	New Hampshire	2 969	N
	New Jersey	5 416	N
	New York	87 532	N
	North Carolina	85 199	N
	Ohio	6 927	N
	Oregon	3 781	N
Pennsylvania	14 750	N	
Tennessee	24 409	N	
Texas	110 190	N	
Virginia	15 720	N	
Wisconsin	4 396	N	
339999H	MISCELLANEOUS FABRICATED PRODUCTS, NEC		
	United States	2 160 568	N
	Arizona	9 880	N
	Arkansas	53 232	N
	California	358 743	N
	Colorado	16 554	N
	Connecticut	14 286	N
	Florida	71 544	N
	Idaho	11 643	N
	Illinois	176 846	N
	Indiana	78 355	N
	Iowa	3 727	N
	Kansas	9 031	N
	Kentucky	9 125	N
	Maine	2 157	N
	Maryland	15 132	N
	Massachusetts	110 381	N
	Michigan	52 115	N
	Minnesota	23 800	N
	Missouri	14 196	N
	Nevada	3 480	N
New Hampshire	4 240	N	
New Jersey	41 045	N	
New York	170 269	N	
North Carolina	138 952	N	
Ohio	42 234	N	
Oklahoma	14 919	N	
Oregon	13 803	N	
Pennsylvania	176 354	N	
Rhode Island	32 252	N	
South Carolina	4 488	N	
Texas	77 919	N	
Virginia	62 026	N	
Washington	15 804	N	
Wisconsin	97 070	N	

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
339999	ALL OTHER MISCELLANEOUS MFG				
11331015	Hardwood logs and bolts..... mil bd ft Intl 1/4 in. scale..			X	N
32100023	Hardwood rough lumber..... mil bd ft..	D	D	X	N
32100029	Softwood rough lumber..... mil bd ft..	30.4	21 505	X	N
32100027	Hardwood dressed lumber..... mil bd ft..	8.6	3 299	X	N
32100033	Softwood dressed lumber..... mil bd ft..	S	26 638	X	N
		35.1	20 973	X	N
32100007	Chips, slabs, edgings, shavings, sawdust, and other wood waste.....	X	D	X	N
32191203	Hardwood cut stock and dimension, excluding furniture frames.....	X	7 036	X	N
32121101	Hardwood plywood..... mil sq ft sm..	D	D	X	N
32121201	Softwood plywood..... mil sq ft (3/8 in. basis)..	D	D	X	N
32121901	Reconstituted wood products, including particleboard, oriented strandboard, medium density fiberboard, and hardboard.....	X	9 423	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products..... 1,000 gallons..	631.9	6 870	X	N
32721103	Glass (float, sheet and plate).....	X	18 453	X	N
33200005	Fabricated metal products, including forgings.....	X	3 271	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard.....	X	281 989	X	N
33200081	Fabricated metal products (except forgings).....	X	247 011	X	N
33100035	Castings (rough and semifinished).....	X	18 791	X	N
33210001	Forgings.....	X	8 760	X	N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products).....	X	115 250	X	N
33142111	Copper and copper-base alloy shapes and forms (except castings, forgings, and fabricated metal products).....	X	13 842	X	N
33100039	Aluminum and aluminum-base alloy shapes and forms (except castings, forgings, and fabricated metal products).....	X	28 479	X	N
33100083	Other nonferrous shapes and forms (except castings, forgings, and fabricated metal products).....	X	30 520	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes.....	X	147 649	X	N
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.....	X	111 775	X	N
32100019	Rough and dressed lumber.....	X	29 036	X	N
00970099	All other materials and components, parts, containers, and supplies.....	X	1 012 218	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.....	X	1 019 119	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

339999 ALL OTHER MISCELLANEOUS MANUFACTURING

This U.S. industry comprises establishments primarily engaged in miscellaneous manufacturing (except medical equipment and supplies, jewelry and flatware, sporting and athletic goods, dolls, toys, games, office supplies (except paper), musical instruments, fasteners, buttons, needles, pins, brooms, brushes, mops, and burial caskets).

The data published with NAICS code 339999 include the following SIC industries:

2499 Wood products, n.e.c. (pt)

3999 Manufacturing industries, n.e.c. (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing did not fully implement the conversion to NAICS. Data for NAICS industry 339999 do not include establishments primarily engaged in the manufacture of electronic cigarette lighters. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3391110	38210	38210	3391141 pt.	38431	38431	3399115 pt.	39114	39114
339111010	3821010	3821010	3391141101	3843101	3843101	3399115101	3911411	3911411
3391110230	3821020	3821020	3391141106	3843102	3843102	3399115106 pt.	3911413 pt.	3911421
3391110YWW	3821000	3821000	3391141111	3843103	3843103	3399115106 pt.	3911413 pt.	3911441 pt
3391110YWY	3821002	3821002	3391141116	3843105	3843105	3399115111 pt.	3911415 pt.	3911431
			3391141121 pt.	3699265	3699200 pt	3399115111 pt.	3911415 pt.	3911441 pt
3391121 pt.	38295 pt.	38295 pt.	3391141122	3843106	3843106	3399115116	3911451	3911451
			3391141231	3843107	3843107	3399115118	3479022	3479021 pt
3391121 pt.	38411	38411	3391141236	3843108	3843108	3399115121 pt.	3911481 pt.	3911461
3391121101	3841112	3841112	3391141241	3843109	3843109	3399115121 pt.	3911481 pt.	3911471
3391121106	3841131	3841131	3391141246	3843111	3843111	3399115YWV pt.	3479000 pt.	3479000 pt
3391121211	3841121	3841121	3391141YWV pt.	3699200 pt.	3699200 pt	3399115YWV pt.	3911400	3911400
3391121216	3841123	3841123						
3391121321	3841142	3841142	3391143	38432	38432	339911W pt.	34790 pt.	34790 pt
3391121326	3841149	3841149	3391143101	3843201	3843201	339911WYWW pt.	39110	39110
3391121431	3841185	3841185	3391143106	3843202	3843202	339911WYWW pt.	3479000 pt.	3479000 pt
3391121536	3841186	3841186	3391143111	3843203	3843203	339911WYWY pt.	3911000	3911000
3391121641	3841172	3841172	3391143116	3843209	3843209	339911WYWY pt.	3479002 pt.	3479002 pt
3391121646	3841184	3841184	3391143121	3843219	3843219	339911WYWY pt.	3911002	3911002
			3391143YWV	3843200	3843200			
3391121651	3841187	3841187	339114W pt.	36990 pt.	36990 pt	3399121	39141 pt.	39141 pt
3391121656	3829510	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121101	3914111	3914111
3391121661	3841196	3841196	339114W pt.	36990 pt.	36990 pt	3399121106	3914131	3914131
3391121766	3841199	3841199	339114W pt.	36990 pt.	36990 pt	3399121111	3914141	3914141
3391121YWV pt.	3829500	3829500 pt	339114W pt.	36990 pt.	36990 pt	3399121116	3914143	3914143
3391121YWV pt.	3841100	3841100	339114WYWW pt.	3699000 pt.	3699000 pt	3399121121	3914153	3914153
			339114WYWW pt.	3699000 pt.	3699000 pt	3399121126	3914175	3914170 pt
3391123	38412	38412	339114WYWY pt.	3699002 pt.	3699002 pt	3399121YWV	3914100	3914100
3391123106	3841291	3841291	339114WYWY pt.	3699002 pt.	3699002 pt			
3391123111	3841293	3841293	339114WYWY pt.	3699002 pt.	3699002 pt	3399123 pt.	34790 pt.	34790 pt
3391123116	3841296	3841296				3399123 pt.	34790 pt.	34790 pt
3391123YWV	3841200	3841200				3399123101	39142 pt.	39142 pt
						3399123106	3914211	3914211
339112W pt.	38290 pt.	38290 pt				3399123106	3914235	3914235
						3399123111	3914241	3914241
339112W pt.	38410	38410				3399123116	3914243	3914243
339112WYWW pt.	3829000 pt.	3829000 pt				3399123121	3914275	3914270 pt
339112WYWW pt.	3841000	3841000				3399123126	3479024	3479021 pt
339112WYWY pt.	3829002 pt.	3829002 pt				3399123YWV pt.	3479000 pt.	3479000 pt
339112WYWY pt.	3841002	3841002				3399123YWV pt.	3914200 pt.	3914200 pt
3391131	38421 pt.	38421 pt	3391151	38511	38511	339912W pt.	34790 pt.	34790 pt
339113101	3842101	3842101	3391151101	3851115	3851115	339912W pt.	34790 pt.	34790 pt
339113104	3842102	3842102	3391151106	3851117	3851117	339912WYWW pt.	3479000 pt.	3479000 pt
3391131207	3842104	3842104	3391151111	3851118	3851118	339912WYWW pt.	3914000 pt.	3914000 pt
3391131211	3842105	3842105	3391151116	3851119	3851119	339912WYWY pt.	3479002 pt.	3479002 pt
3391131214	3842106	3842106	3391151YWV	3851100	3851100	339912WYWY pt.	3914002 pt.	3914002 pt
3391131217	3842107	3842107						
3391131217	3842108	3842108	3391153	38514	38514	3399131	39152	39152
3391131224	3842109	3842109	3391153101	3851431	3851431	3399131100 pt.	3915200 pt.	3915200
3391131227	3842110	3842110	3391153106	3851445	3851445	3399131100 pt.	3915200 pt.	3915211
3391131231	3842112	3842112	3391153YWV	3851400	3851400	3399131100 pt.	3915200 pt.	3915233
3391131234	3842113	3842113	3391155	38515	38515	3399133	39153	39153
3391131337	3842122	3842122	3391155101	3851525	3851525	3399133101	3915311	3915311
3391131341	3842123	3842123	3391155206	3851527	3851527	3399133206	3915312	3915312
3391131344	3842124	3842124	3391155YWV	3851500	3851500	3399133211	3915321	3915321
3391131347	3842126	3842126				3399133316	3915331	3915331
3391131351	3842127	3842127				3399133YWV	3915300	3915300
3391131354	3842129	3842129						
3391131457	3842131	3842131	3391157	38516	38516	3399135	39154	39154
3391131567	3842137	3842137	3391157101	3851612	3851612	3399135100	3915400	3915400
3391131571	3842165	3842165	3391157206	3851613	3851613			
			3391157YWV	3851600	3851600			
3391131574	3842183	3842183	339115B	38517	38517	339913W	39150	39150
3391131577	3842185	3842185	339115B101	3851702	3851702	339913WYWW	3915000	3915000
3391131581	3842187	3842187	339115B106 pt.	3851705 pt.	3851703	339913WYWY	3915002	3915002
3391131584	3842189	3842189	339115B106 pt.	3851705 pt.	3851704			
3391131587	3842191	3842191	339115B111	3851706	3851706			
3391131591	3842197	3842197	339115B116	3851709	3851709			
3391131594	3842198	3842198	339115B121	3851719	3851719			
3391131YWV	3842100 pt.	3842100 pt	339115B125	3851721	3851700 pt			
			339115BYWV	3851700	3851700 pt			
3391135	38423	38423	339115W	38510	38510	3399140 pt.	34998 pt.	34998 pt
3391135101	3842311	3842311	339115WYWW	3851000	3851000	3399140 pt.	34998 pt.	34998 pt
3391135106	3842321	3842321	339115WYWY	3851002	3851002	3399140 pt.	34998 pt.	34998 pt
3391135111	3842322	3842322						
3391135116	3842351	3842351	3391160	80720	80720	3399140 pt.	34998 pt.	34998 pt
3391135121	3842361	3842361	3391160100 pt.	8072001	8072000 pt	3399140 pt.	34998 pt.	34998 pt
3391135126	3842373	3842373	3391160100 pt.	8072000 pt.	8072000 pt	3399140 pt.	34998 pt.	34998 pt
3391135YWV	3842300	3842300	3391160YWW	8072000 pt.	8072000 pt	3399140 pt.	34998 pt.	34998 pt
			3391160YWY	8072002	8072000 pt			
3391137	25991	25991	3399111	39111	39111	3399140 pt.	39610	39610
3391137100	2599100	2599100	3399111101	3911111	3911111	3399140111 pt.	3961032 pt.	3961031
			3399111206	3911112	3911112	3399140111 pt.	3961032 pt.	3961041 pt
			3399111311	3911114	3911114	3399140118	3499895	3499899 pt
			3399111421 pt.	3911121 pt.	3911131	3399140201	3961011	3961011
			3399111526	3911115	3911115	3399140206 pt.	3961022 pt.	3961021
			3399111531	3911198	3911198	3399140206 pt.	3961022 pt.	3961041 pt
			3399111YWV	3911100	3911100	3399140216	3961051	3961051
						3399140221	3961072	3961072
						3399140226 pt.	3479026	3479021 pt
						3399140226 pt.	3961098 pt.	3961096
339113W pt.	25990 pt.	25990 pt.	3399113	39113	39113	3399140226 pt.	3961098 pt.	3961099
			3399113101	3911311	3911311	3399140YWW pt.	3479000 pt.	3479000 pt
			3399113106 pt.	3911315 pt.	3911321	3399140YWW pt.	3499000 pt.	3499000 pt
			3399113106 pt.	3911315 pt.	3911341 pt	3399140YWW pt.	3499800 pt.	3499800 pt
			3399113111 pt.	3911317 pt.	3911331	3399140YWW pt.	3961000	3961000
			3399113111 pt.	3911317 pt.	3911341 pt	3399140YWY pt.	3479002 pt.	3479002 pt
			3399113116	3911398	3911398	3399140YWY pt.	3499002 pt.	3499002 pt
			3399113YWV	3911300	3911300	3399140YWY pt.	3961002	3961002
3391141 pt.	36992 pt.	36992 pt.	3399115 pt.	34790 pt.	34790 pt			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3399927.....	39314.....	39314.....	3399941 pt.....	39911.....	39911.....	339995W.....	39950.....	39950.....
3399927116 pt.....	3931437 pt.....	3931450.....	3399941101.....	3991113.....	3991113.....	339995WYWWW.....	3995000.....	3995000.....
3399927116 pt.....	3931437 pt.....	3931452.....	3399941106.....	3991198.....	3991198.....	339995WYWY.....	3995002.....	3995002.....
3399927201.....	3931413.....	3931413.....	3399941311.....	2392471.....	2392471.....			
3399927206.....	3931415.....	3931415.....	3399941316.....	2392473.....	2392473.....	3399991.....	39991.....	39991.....
3399927211.....	3931427.....	3931427.....	3399941321.....	2392475.....	2392475.....	3399991101.....	3999113.....	3999113.....
3399927221.....	3931488.....	3931488.....	3399941YVW pt.....	2392400 pt.....	2392400 pt.....	3399991106.....	3999117.....	3999117.....
3399927226.....	3931498.....	3931498.....	3399941YVW pt.....	3991100.....	3991100.....	3399991111.....	3999140.....	3999140.....
3399927331.....	3931431.....	3931431.....				3399991116.....	3999170.....	3999170.....
3399927YVW.....	3931400.....	3931400.....	3399943.....	39912.....	39912.....	3399991121.....	3999171.....	3999171.....
			3399943101 pt.....	3991251 pt.....	3991211.....	3399991YVW.....	3999100.....	3999100.....
339992W.....	39310.....	39310.....	3399943101 pt.....	3991251 pt.....	3991233.....			
339992WYWWW.....	3931000.....	3931000.....	3399943206.....	3991243.....	3991243.....	3399993.....	39992.....	39992.....
339992WYWY.....	3931002.....	3931002.....	3399943211 pt.....	3991253 pt.....	3991281.....	3399993101.....	3999222.....	3999222.....
			3399943211 pt.....	3991253 pt.....	3991283.....	3399993106.....	3999299.....	3999299.....
3399931 pt.....	31310 pt.....	31310 pt.....	3399943211 pt.....	3991253 pt.....	3991285.....	3399993YVW.....	3999200.....	3999200.....
			3399943YVW.....	3991200.....	3991200.....			
3399931 pt.....	39651.....	39651.....				3399995.....	39994.....	39994.....
3399931101 pt.....	3965131 pt.....	3965101.....	3399945.....	39913.....	39913.....	3399995100.....	3999400.....	3999400.....
3399931101 pt.....	3965131 pt.....	3965109.....	3399945101.....	3991321.....	3991321.....			
3399931106 pt.....	3965133 pt.....	3965111.....	3399945106 pt.....	3991328 pt.....	3991327.....	3399997.....	39997.....	39997.....
3399931106 pt.....	3965133 pt.....	3965119.....	3399945106 pt.....	3991328 pt.....	3991329.....	3399997100.....	3999700.....	3999700.....
3399931111 pt.....	3131032.....	3131061 pt.....	3399945211.....	3991336.....	3991336.....			
3399931111 pt.....	3965135 pt.....	3965121.....	3399945216.....	3991338.....	3991338.....	3399999.....	39998.....	39998.....
3399931111 pt.....	3965135 pt.....	3965129.....	3399945221.....	3991343.....	3991343.....	3399999101.....	3999813.....	3999813.....
3399931YVW pt.....	3131000 pt.....	3131000 pt.....	3399945226.....	3991398.....	3991398.....	3399999106 pt.....	3999816 pt.....	3999816.....
3399933YVW pt.....	3965100.....	3965100.....	3399945YVW.....	3991300.....	3991300.....	3399999111.....	3999821.....	3999821.....
						3399999YVW.....	3999800.....	3999800.....
3399933.....	39654.....	39654.....						
3399933101 pt.....	3965441 pt.....	3965422.....	339994W pt.....	23920 pt.....	23920 pt.....	339999C.....	24991 pt.....	24991 pt.....
3399933101 pt.....	3965441 pt.....	3965423.....				339999C101.....	2499111.....	2499111.....
3399933106 pt.....	3965443 pt.....	3965431.....	339994W pt.....	39910.....	39910.....	339999C206.....	2499161.....	2499161.....
3399933106 pt.....	3965443 pt.....	3965433.....	339994WYVW pt.....	2392000 pt.....	2392000 pt.....	339999C311.....	2499115.....	2499115.....
3399933106 pt.....	3965443 pt.....	3965439.....	339994WYVW pt.....	2392002 pt.....	2392002 pt.....	339999C316.....	2499171.....	2499171.....
3399933YVW.....	3965400.....	3965400.....	339994WYVW pt.....	3991002.....	3991002.....	339999CYVW.....	2499100 pt.....	2499100 pt.....
3399935.....	39656.....	39656.....				339999H.....	39999 pt.....	39999 pt.....
3399935101.....	3965620.....	3965620.....	3399951.....	39951.....	39951.....	339999H101.....	3999907.....	3999907.....
3399935106.....	3965625.....	3965625.....	3399951101.....	3995113.....	3995113.....	339999H106.....	3999909.....	3999911 pt.....
3399935111.....	3965633.....	3965633.....	3399951206.....	3995115.....	3995115.....	339999H111.....	3999951.....	3999951.....
3399935116.....	3965651.....	3965651.....	3399951YVW.....	3995100.....	3995100.....	339999H121.....	3999981.....	3999981.....
3399935121.....	3965671.....	3965671.....				339999H151 pt.....	3999997 pt.....	3999913 pt.....
3399935126 pt.....	3965691 pt.....	3965681.....	3399953.....	39952.....	39952.....	339999H151 pt.....	3999997 pt.....	3999924.....
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			3399953YVW.....	3995200.....	3995200.....	339999HYVW.....	3999900 pt.....	3999900 pt.....
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339993WYWWW pt.....	3965000.....	3965000.....	3399955100 pt.....	3995300 pt.....	3995311.....	339999WYWY pt.....	3999000 pt.....	3999000 pt.....
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339993WYWY pt.....	3965002.....	3965002.....	3399955100 pt.....	3995300 pt.....	3995358.....	339999WYVW pt.....	3999002 pt.....	3999002 pt.....
			3399955100 pt.....	3995300 pt.....	3995393.....			
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1997

Issued November 1999

EC97M-5111A

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Newspaper Publishers

1997

Issued November 1999

EC97M-5111A

1997 Economic Census

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511110	Newspaper publishers	6 814	8 758	403 355	11 789 095	134 259	215 888	3 192 079	33 476 835	8 110 911	41 601 011	1 591 323
271100	Newspapers.....	N	8 758	403 355	11 789 095	134 259	215 888	3 192 079	33 476 835	8 110 911	41 601 011	1 591 323

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
511110, NEWSPAPER PUBLISHERS												
United States	1	8 758	2 562	403 355	11 789 095	134 259	215 888	3 192 079	33 476 835	8 110 911	41 601 011	1 591 323
Alabama.....	1	117	34	4 317	112 898	1 735	3 059	36 659	264 571	59 020	323 657	10 100
Alaska.....	1	39	10	1 119	21 819	398	517	5 914	73 199	14 088	87 329	2 111
Arizona.....	-	99	34	5 897	178 298	1 871	3 612	48 085	562 793	141 555	704 499	24 460
Arkansas.....	-	119	35	3 534	74 077	1 457	2 383	24 538	185 762	45 237	231 182	9 702
California.....	1	663	209	44 763	1 463 003	14 736	23 283	364 224	3 946 029	1 049 513	5 000 689	166 580
Colorado.....	-	189	46	7 250	212 343	2 436	3 994	61 220	521 644	202 527	724 584	57 179
Connecticut.....	1	86	36	6 330	192 740	1 612	2 751	42 595	548 249	93 172	637 876	17 642
Delaware.....	-	22	6	992	30 791	345	556	9 369	90 577	23 803	114 401	1 916
District of Columbia.....	-	33	10	3 425	186 627	668	1 228	25 565	708 557	58 364	767 371	6 560
Florida.....	-	317	86	22 020	677 053	7 204	12 434	171 284	2 134 746	516 152	2 652 737	145 669
Georgia.....	2	256	59	11 481	299 217	3 125	4 987	68 438	788 616	177 639	966 376	30 360
Hawaii *.....	-	24	9	1 551	62 383	655	1 122	23 000	178 185	36 030	214 319	5 056
Idaho.....	1	55	19	2 071	37 928	637	907	11 369	112 943	19 076	132 094	3 100
Illinois.....	-	417	118	19 413	585 620	6 882	11 514	184 224	1 764 709	431 119	2 196 756	64 886
Indiana.....	1	198	80	10 436	264 051	3 829	6 235	87 566	666 101	148 775	815 000	125 843
Iowa.....	-	238	54	5 943	120 395	2 094	2 942	35 549	365 768	75 911	441 925	25 323
Kansas.....	1	200	46	4 290	93 283	1 480	2 027	25 613	233 544	46 689	280 388	6 583
Kentucky.....	-	164	47	4 811	117 158	1 537	2 418	28 866	338 486	71 210	409 865	12 126
Louisiana.....	-	116	38	4 610	127 198	1 860	3 125	41 540	341 506	94 285	435 761	12 305
Maine.....	-	68	19	2 451	61 396	972	1 553	19 459	134 527	30 220	164 783	5 958
Maryland.....	-	93	32	4 716	116 500	1 791	2 692	44 146	493 093	94 564	587 915	21 294
Massachusetts.....	1	178	60	14 076	503 457	4 125	6 696	126 435	1 215 635	245 644	1 462 106	49 128
Michigan.....	2	237	83	13 082	363 818	4 279	6 658	100 011	974 701	254 514	1 230 019	31 876
Minnesota.....	1	293	68	8 737	261 814	2 511	3 845	61 281	646 409	153 255	800 690	26 613
Mississippi.....	-	107	30	2 689	58 252	806	1 335	13 488	163 111	35 601	198 894	5 381
Missouri.....	1	268	65	9 047	228 052	3 254	5 157	73 003	686 522	169 975	856 764	27 726
Montana.....	1	84	15	1 667	33 220	564	770	8 838	102 702	20 817	123 532	4 261
Nebraska.....	-	137	25	3 188	65 459	1 090	1 628	17 680	184 154	59 316	243 578	11 343
Nevada.....	-	49	16	2 054	56 984	978	1 629	24 150	236 547	49 532	286 785	5 307
New Hampshire.....	1	63	16	2 189	54 201	807	1 341	15 538	119 102	24 818	144 101	4 633
New Jersey.....	2	177	63	14 020	510 299	4 464	7 631	130 516	1 276 045	388 718	1 665 693	35 797
New Mexico.....	2	64	24	2 460	54 154	641	1 167	14 096	152 887	31 302	184 007	5 788
New York.....	-	480	147	25 285	998 688	8 111	12 329	264 162	3 035 210	642 092	3 678 088	103 699
North Carolina.....	1	234	95	10 779	278 313	3 592	5 920	72 659	753 944	182 617	937 186	30 314
North Dakota.....	3	65	14	1 471	27 861	566	904	10 106	73 485	19 483	93 011	2 664
Ohio.....	-	318	119	16 970	505 940	6 320	10 530	150 561	1 412 749	333 209	1 746 174	76 230
Oklahoma.....	-	172	42	4 378	100 841	1 746	2 683	31 098	305 969	54 381	360 294	19 678
Oregon.....	-	131	39	5 015	150 717	1 902	3 158	47 526	407 558	104 161	511 953	21 353
Pennsylvania.....	-	282	113	20 727	610 262	7 423	11 354	174 235	1 607 203	354 438	1 962 887	122 919
Rhode Island.....	7	25	11	2 345	72 961	782	1 122	20 402	150 141	27 830	177 836	5 306
South Carolina.....	-	116	32	5 186	114 058	1 520	2 173	26 670	334 846	75 400	410 356	16 002
South Dakota.....	1	94	16	1 639	28 398	632	801	8 529	81 977	17 177	99 204	2 839
Tennessee.....	1	174	55	8 000	176 689	2 690	4 152	49 014	551 752	107 351	659 402	15 058
Texas.....	-	665	138	19 493	538 134	6 080	10 684	122 630	1 879 940	596 385	2 473 136	99 368
Utah.....	2	57	13	2 668	62 670	843	1 429	19 917	208 471	46 127	254 731	10 496
Vermont.....	2	53	12	1 124	24 746	358	527	5 692	66 771	13 200	80 059	2 043
Virginia.....	1	177	67	10 043	306 375	2 801	4 747	54 890	892 260	350 863	1 243 593	30 642
Washington.....	-	187	50	10 024	273 787	3 358	5 003	101 184	693 258	148 388	841 834	31 274
West Virginia.....	1	81	21	2 828	53 695	1 172	1 894	19 478	154 854	32 917	187 856	8 470
Wisconsin.....	1	231	71	9 729	222 851	3 119	4 795	63 628	614 438	133 578	748 202	28 751
Wyoming.....	2	46	15	1 022	17 621	401	487	5 439	41 185	8 303	49 533	1 611

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
511110, NEWSPAPER PUBLISHERS		511110, NEWSPAPER PUBLISHERS—Con.	
Companies ¹ number..	6 814	Value added \$1,000..	33 476 835
All establishments number..	8 758	Total inventories, beginning of year \$1,000..	916 434
Establishments with 1 to 19 employees number..	6 196	Finished goods inventories, beginning of year \$1,000..	64 755
Establishments with 20 to 99 employees number..	1 833	Work-in-process inventories, beginning of year \$1,000..	18 566
Establishments with 100 employees or more number..	729	Materials and supplies inventories, beginning of year \$1,000..	833 113
All employees number..	403 353	Total inventories, end of year \$1,000..	953 982
Total compensation ² \$1,000..	14 363 051	Finished goods inventories, end of year \$1,000..	54 017
Annual payroll \$1,000..	11 789 095	Work-in-process inventories, end of year \$1,000..	16 039
Total fringe benefits \$1,000..	2 573 956	Materials and supplies inventories, end of year \$1,000..	883 926
Production workers, average for year number..	134 259	Gross book value of total assets at beginning of year \$1,000..	22 824 892
Production workers on March 12 number..	133 796	Total capital expenditures (new and used) \$1,000..	1 591 323
Production workers on May 12 number..	134 624	Capital expenditures for buildings and other structures (new and used) \$1,000..	343 654
Production workers on August 12 number..	133 751	Capital expenditures for machinery and equipment (new and used) \$1,000..	1 247 669
Production workers on November 12 number..	134 865	Total retirements ² \$1,000..	519 415
Production-worker hours 1,000..	215 888	Gross book value of total assets at end of year \$1,000..	23 896 800
Production-worker wages \$1,000..	3 192 079	Total depreciation during year ² \$1,000..	1 369 640
Total cost of materials \$1,000..	8 110 911	Total rental payments ² \$1,000..	330 906
Cost of materials, parts, containers, etc., consumed \$1,000..	6 722 349	Buildings and other structures rental payments ² \$1,000..	233 112
Cost of resales \$1,000..	108 059	Machinery and equipment rental payments ² \$1,000..	97 794
Cost of fuels \$1,000..	49 214	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	103 978
Cost of purchased electricity \$1,000..	252 777	Response coverage ratio ⁴ percent..	87
Cost of contract work \$1,000..	978 512	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	193 541
Quantity of electricity purchased for heat and power 1,000 kWh..	3 845 042	Response coverage ratio ⁴ percent..	87
Quantity of electricity generated less sold for heat and power 1,000 kWh..	-	Cost of purchased communications services ³ \$1,000..	250 334
Total value of shipments \$1,000..	41 601 011	Response coverage ratio ⁴ percent..	87
Primary products value of shipments \$1,000..	39 809 369	Cost of purchased legal services ³ \$1,000..	96 170
Secondary products value of shipments \$1,000..	1 114 404	Response coverage ratio ⁴ percent..	87
Total miscellaneous receipts \$1,000..	677 238	Cost of purchased accounting and bookkeeping services ³ \$1,000..	54 867
Value of resales \$1,000..	141 983	Response coverage ratio ⁴ percent..	87
Contract receipts \$1,000..	2 054	Cost of purchased advertising services ³ \$1,000..	294 993
Other miscellaneous receipts \$1,000..	533 201	Response coverage ratio ⁴ percent..	87
Primary products specialization ratio percent..	97	Cost of purchased software and other data processing services ³ \$1,000..	74 532
Value of primary products shipments made in all industries \$1,000..	39 844 496	Response coverage ratio ⁴ percent..	87
Value of primary products shipments made in this industry \$1,000..	39 809 369	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	17 465
Value of primary products shipments made in other industries \$1,000..	35 127	Response coverage ratio ⁴ percent..	87
Coverage ratio percent..	99		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511110. NEWSPAPER PUBLISHERS												
All establishments	1	8 758	2 562	403 355	11 789 095	134 259	215 888	3 192 079	33 476 835	8 110 911	41 601 011	1 591 323
Establishments with 1 to 4 employees	8	3 104	—	6 361	117 083	3 042	3 780	34 974	292 354	79 234	373 483	12 349
Establishments with 5 to 9 employees	7	1 696	—	11 426	199 369	3 920	4 594	57 703	488 869	132 303	622 351	19 998
Establishments with 10 to 19 employees	3	1 396	—	18 941	349 994	7 394	9 984	114 464	807 880	262 777	1 072 082	49 072
Establishments with 20 to 49 employees	2	1 262	1 262	39 316	820 503	15 329	23 280	255 426	2 059 905	460 527	2 524 840	75 086
Establishments with 50 to 99 employees	1	571	571	39 618	866 555	14 097	21 738	243 502	2 468 637	561 921	3 030 765	95 866
Establishments with 100 to 249 employees	1	434	434	68 182	1 648 037	23 625	37 690	466 282	4 642 486	1 006 496	5 654 704	244 733
Establishments with 250 to 499 employees	1	157	157	53 464	1 500 954	17 950	30 640	427 199	4 065 777	862 200	4 928 728	284 238
Establishments with 500 to 999 employees	—	76	76	51 818	1 641 052	17 074	28 235	479 390	4 807 558	1 166 454	5 974 081	227 928
Establishments with 1,000 to 2,499 employees	—	50	50	75 005	2 916 166	22 205	39 701	710 643	8 688 497	2 483 604	11 169 168	380 944
Establishments with 2,500 employees or more	—	12	12	39 224	1 729 382	9 623	16 246	402 496	5 154 872	1 095 395	6 250 809	201 109
Administrative records ²	9	4 472	—	20 538	312 969	6 883	7 317	82 785	745 062	206 515	954 524	35 658

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511110	Newspaper publishers	8 758	403 355	11 789 095	134 259	215 888	3 192 079	33 476 835	8 110 911	41 601 011	1 591 323
5111101	Daily and Sunday newspaper publishing (receipts from subscriptions and sales)	42	5 264	195 823	1 643	2 634	54 301	440 836	133 966	575 070	31 544
5111103	Daily and Sunday newspaper publishing (receipts from advertising)	1 494	298 353	9 394 580	96 019	160 263	2 512 185	27 747 944	6 473 362	34 221 095	1 342 028
5111105	Weekly and other newspaper publishing (receipts from subscriptions and sales)	138	2 862	72 439	1 286	2 079	25 210	387 074	128 021	517 689	15 388
5111107	Weekly and other newspaper publishing (receipts from advertising)	1 768	47 477	1 099 803	19 353	29 867	335 090	2 525 952	722 281	3 253 102	83 399

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511110	Newspapers	N	X	X	39 844 496	N	X	X	31 933 241
5111101	Daily and Sunday newspaper publishing (receipts from subscriptions and sales)	N	X	X	7 351 949	N	X	X	6 470 838
51111011	Morning newspapers (no Sunday editions) (receipts from subscriptions and sales)	N	X	X	550 249	N	X	X	N
5111101111	Morning newspapers (no Sunday editions) (receipts from subscriptions and sales)	119	X	X	550 249	121	X	X	462 424
51111012	Evening newspapers (no Sunday editions) (receipts from subscriptions and sales)	N	X	X	235 377	N	X	X	N
5111101216	Evening newspapers (no Sunday editions) (receipts from subscriptions and sales)	171	X	X	235 377	212	X	X	278 123
51111013	Morning and Sunday combination newspapers (receipts from subscriptions and sales)	N	X	X	4 154 934	N	X	X	N
5111101321	Morning and Sunday combination newspapers (receipts from subscriptions and sales)	169	X	X	4 154 934	143	X	X	3 529 114
51111014	Evening and Sunday combination newspapers (receipts from subscriptions and sales)	N	X	X	551 620	N	X	X	N
5111101426	Evening and Sunday combination newspapers (receipts from subscriptions and sales)	119	X	X	551 620	130	X	X	554 697
51111015	Morning and evening combination newspapers (no Sunday editions) (receipts from subscriptions and sales)	N	X	X	140 719	N	X	X	N
5111101531	Morning and evening combination newspapers (no Sunday editions) (receipts from subscriptions and sales)	39	X	X	140 719	15	X	X	15 811
51111016	Morning, evening, and Sunday combination newspapers (receipts from subscriptions and sales)	N	X	X	1 634 483	N	X	X	N
5111101636	Morning, evening, and Sunday combination newspapers (receipts from subscriptions and sales)	68	X	X	1 634 483	46	X	X	1 086 051
5111101Y	Daily and Sunday newspapers (receipts from subscriptions and sales), nsk	N	X	X	84 567	N	X	X	N
5111101YWV	Daily and Sunday newspapers (receipts from subscriptions and sales), nsk	N	X	X	84 567	N	X	X	543 798
5111103	Daily and Sunday newspaper publishing (receipts from advertising)	N	X	X	25 592 359	N	X	X	19 861 452
51111031	Morning newspapers (no Sunday editions) (receipts from advertising)	N	X	X	1 178 139	N	X	X	N
5111103111	Morning newspapers (no Sunday editions) (receipts from advertising)	139	X	X	1 178 139	140	X	X	907 903
51111032	Evening newspapers (no Sunday editions) (receipts from advertising)	N	X	X	718 876	N	X	X	N
5111103216	Evening newspapers (no Sunday editions) (receipts from advertising)	186	X	X	718 876	219	X	X	792 481
51111033	Morning and Sunday combination newspapers (receipts from advertising)	N	X	X	15 675 245	N	X	X	N
5111103321	Morning and Sunday combination newspapers (receipts from advertising)	172	X	X	15 675 245	145	X	X	11 833 856
51111034	Evening and Sunday combination newspapers (receipts from advertising)	N	X	X	1 512 259	N	X	X	N
5111103426	Evening and Sunday combination newspapers (receipts from advertising)	118	X	X	1 512 259	129	X	X	1 585 802
51111035	Morning and evening combination newspapers (no Sunday editions) (receipts from advertising)	N	X	X	139 734	N	X	X	N
5111103531	Morning and evening combination newspapers (no Sunday editions) (receipts from advertising)	45	X	X	139 734	15	X	X	35 089
51111036	Morning, evening, and Sunday combination newspapers (receipts from advertising)	N	X	X	5 935 712	N	X	X	N
5111103636	Morning, evening, and Sunday combination newspapers (receipts from advertising)	77	X	X	5 935 712	47	X	X	3 462 599
5111103Y	Daily and Sunday newspapers (receipts from advertising), nsk	N	X	X	432 394	N	X	X	N
5111103YWV	Daily and Sunday newspapers (receipts from advertising), nsk	N	X	X	432 394	N	X	X	1 243 722

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511110	Newspapers—Con.								
5111105	Weekly and other newspaper publishing (receipts from subscriptions and sales).....	N	X	X	779 599	N	X	X	645 309
51111051	Weekly and other newspapers (receipts from subscriptions and sales).....	N	X	X	750 126	N	X	X	N
5111105111	Weekly newspapers, including those issued on Sunday only (receipts from subscriptions and sales).....	457	X	X	626 186	410	X	X	512 116
5111105116	Other newspapers (those issued 2 or 3 times a week or less than once a week) (receipts from subscriptions and sales).....	225	X	X	123 940	196	X	X	114 254
5111105Y	Weekly and other newspapers (receipts from subscriptions and sales), nsk.....	N	X	X	29 473	N	X	X	N
5111105YVW	Weekly and other newspapers (receipts from subscriptions and sales), nsk.....	N	X	X	29 473	N	X	X	18 939
5111107	Weekly and other newspaper publishing (receipts from advertising).....	N	X	X	2 908 857	N	X	X	2 124 643
51111071	Weekly and other newspapers (receipts from advertising).....	N	X	X	2 760 060	N	X	X	N
5111107111	Weekly newspapers, including those issued on Sunday only (receipts from advertising).....	980	X	X	2 168 264	977	X	X	1 514 695
5111107116	Other newspapers (those issued 2 or 3 times a week or less than once a week) (receipts from advertising).....	384	X	X	591 796	368	X	X	462 705
5111107Y	Weekly and other newspapers (receipts from advertising), nsk.....	N	X	X	148 797	N	X	X	N
5111107YVW	Weekly and other newspapers (receipts from advertising), nsk.....	N	X	X	148 797	N	X	X	147 243
511110W	Newspaper publishers, nsk, total.....	N	X	X	3 211 732	N	X	X	2 830 999
511110WY	Newspaper publishers, nsk, total.....	N	X	X	3 211 732	N	X	X	N
511110WYVW	Newspaper publishers, nsk, for nonadministrative-record establishments.....	N	X	X	2 263 643	N	X	X	1 988 160
511110WYVWY	Newspaper publishers, nsk, for administrative-record establishments.....	N	X	X	948 089	N	X	X	842 839

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111101	DAILY AND SUNDAY NEWSPAPER PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS AND SALES)		
	United States.....	7 351 949	6 470 838
	Alabama.....	55 694	58 686
	Alaska.....	14 840	4 374
	Arizona.....	124 100	113 126
	Arkansas.....	42 896	33 796
	California.....	786 756	710 721
	Colorado.....	78 002	76 343
	Connecticut.....	124 277	108 338
	Florida.....	380 717	324 366
	Georgia.....	161 419	130 821
	Hawaii.....	37 155	N
	Idaho.....	21 359	20 830
	Illinois.....	449 634	373 725
	Indiana.....	166 959	138 392
	Iowa.....	98 375	94 302
	Kansas.....	45 898	41 586
	Kentucky.....	79 235	71 160
	Louisiana.....	77 395	63 866
	Maine.....	38 569	35 776
	Maryland.....	103 628	94 490
	Massachusetts.....	255 728	249 585

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111101	DAILY AND SUNDAY NEWSPAPER PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS AND SALES)—Con.		
	Michigan	214 797	216 765
	Minnesota	135 369	112 366
	Mississippi	37 148	31 791
	Missouri	162 912	145 551
	Montana	28 846	23 138
	Nebraska	45 241	38 350
	New Hampshire	28 183	22 030
	New Jersey	262 531	181 959
	New Mexico	24 400	31 799
	New York	719 423	687 731
	North Carolina	136 766	117 868
	North Dakota	23 239	20 254
	Ohio	333 403	294 552
	Oklahoma	67 772	59 128
	Oregon	90 315	76 732
	Pennsylvania	420 627	395 823
	South Carolina	72 970	51 316
	South Dakota	20 076	16 973
	Tennessee	131 713	103 541
	Texas	346 685	269 985
	Utah	37 480	37 947
	Virginia	308 922	278 420
	Washington	172 670	122 568
	West Virginia	45 701	30 613
	Wisconsin	146 687	140 099
	Wyoming	8 040	6 754
5111103	DAILY AND SUNDAY NEWSPAPER PUBLISHING (RECEIPTS FROM ADVERTISING)		
	United States	25 592 359	19 861 452
	Alabama	215 433	178 942
	Alaska	52 480	14 350
	Arizona	480 574	338 318
	Arkansas	138 220	92 100
	California	3 268 189	2 904 314
	Colorado	528 105	323 417
	Connecticut	338 211	289 409
	Florida	1 793 256	1 438 419
	Georgia	603 934	404 657
	Hawaii	127 269	N
	Idaho	70 944	53 733
	Illinois	1 320 688	1 010 566
	Indiana	451 697	350 334
	Iowa	237 782	172 429
	Kansas	130 471	106 747
	Kentucky	210 539	157 994
	Louisiana	271 267	208 135
	Maine	82 540	66 273
	Maryland	330 200	251 803
	Massachusetts	884 381	634 876
	Michigan	666 173	576 208
	Minnesota	436 188	283 522
	Mississippi	104 926	83 006
	Missouri	468 536	340 339
	Montana	57 349	42 679
	Nebraska	150 515	112 158
	New Hampshire	81 404	57 612
	New Jersey	1 084 681	636 171
	New Mexico	93 162	71 131
	New York	2 115 264	1 892 443
	North Carolina	595 402	412 771
	North Dakota	44 580	38 352
	Ohio	1 084 380	813 177
	Oklahoma	238 750	191 058
	Oregon	310 402	206 294
	Pennsylvania	1 240 335	985 870
	South Carolina	257 815	172 666
	South Dakota	48 855	32 502
	Tennessee	380 644	267 328
	Texas	1 768 637	1 263 800
	Utah	145 041	102 798
	Virginia	648 976	457 089
	Washington	496 799	436 701
	West Virginia	92 791	73 945
	Wisconsin	400 093	294 978
	Wyoming	20 983	18 302
5111105	WEEKLY AND OTHER NEWSPAPER PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS AND SALES)		
	United States	779 599	645 309
	Alabama	3 190	2 977
	Arizona	3 728	3 128
	Arkansas	3 575	N
	California	48 448	25 688
	Colorado	4 724	2 809

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111105	WEEKLY AND OTHER NEWSPAPER PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS AND SALES)—Con.		
	Connecticut	27 905	7 756
	District of Columb	19 570	14 488
	Florida	153 189	N
	Georgia	10 297	5 583
	Illinois	29 449	21 091
	Indiana	12 748	5 674
	Iowa	5 303	6 848
	Kansas	3 656	7 995
	Kentucky	10 319	6 484
	Louisiana	3 971	4 007
	Maine	3 961	4 487
	Maryland	7 957	3 432
	Massachusetts	38 027	24 698
	Michigan	30 177	21 262
	Minnesota	9 986	9 677
	Mississippi	3 027	2 719
	Missouri	8 907	7 979
	Nebraska	2 490	N
	Nevada	5 133	N
	New Hampshire	2 065	N
	New Jersey	18 581	16 484
	New York	159 051	136 343
	North Carolina	10 272	7 629
	Ohio	14 617	13 702
	Oklahoma	2 848	3 828
	Oregon	3 919	8 192
	Pennsylvania	11 534	13 533
	Rhode Island	2 618	2 378
	South Carolina	3 843	4 413
	Tennessee	6 454	9 521
	Texas	23 854	21 203
	Virginia	33 525	31 263
	Washington	11 851	8 181
	Wisconsin	12 831	11 620
5111107	WEEKLY AND OTHER NEWSPAPER PUBLISHING (RECEIPTS FROM ADVERTISING)		
	United States	2 908 857	2 124 643
	Alabama	18 630	19 425
	Alaska	4 336	N
	Arizona	50 868	48 802
	Arkansas	16 935	11 664
	California	343 772	220 387
	Colorado	47 663	20 094
	Connecticut	86 015	56 286
	Delaware	9 905	5 135
	District of Columb	37 470	20 069
	Florida	135 900	106 475
	Georgia	47 613	44 050
	Idaho	8 796	5 803
	Illinois	167 222	126 998
	Indiana	36 854	25 446
	Iowa	29 909	28 058
	Kansas	16 397	13 315
	Kentucky	42 193	24 746
	Louisiana	23 734	12 675
	Maine	16 942	13 049
	Maryland	93 693	54 588
	Massachusetts	118 606	82 614
	Michigan	150 294	91 454
	Minnesota	77 441	53 297
	Mississippi	23 496	17 898
	Missouri	84 899	44 930
	Montana	4 119	N
	Nebraska	11 606	10 634
	Nevada	24 435	6 600
	New Hampshire	10 098	12 309
	New Jersey	97 248	102 948
	New Mexico	8 899	7 717
	New York	318 936	240 243
	North Carolina	63 377	36 092
	North Dakota	3 316	4 954
	Ohio	95 872	68 925
	Oklahoma	18 010	9 884
	Oregon	39 061	29 051
	Pennsylvania	79 806	94 053
	Rhode Island	9 256	9 816
	South Carolina	19 349	25 004
	South Dakota	5 599	3 461
	Tennessee	34 068	41 457
	Texas	106 043	76 898
	Utah	9 325	4 485
	Vermont	11 526	6 885

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111107	WEEKLY AND OTHER NEWSPAPER PUBLISHING (RECEIPTS FROM ADVERTISING)— Con.		
	Virginia	90 909	71 545
	Washington	74 181	45 933
	West Virginia	7 027	5 726
	Wisconsin	61 039	42 519
	Wyoming	2 808	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
511110	NEWSPAPER PUBLISHERS				
32212203	Newsprint	X	4 597 781	X	N
32212035	All other paper except light sensitive	X	164 634	X	N
32591003	Printing ink	X	184 936	X	N
32312201	Printing plates, prepared for printing	X	84 423	X	N
32599201	Unexposed photosensitive printing plates	X	35 664	X	N
32599203	Light sensitive films and papers	X	65 337	X	N
00970099	All other materials and components, parts, containers, and supplies	X	520 575	X	459 100
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 068 999	X	1 010 535

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

511110 NEWSPAPER PUBLISHERS

This U.S. industry comprises establishments known as newspaper publishers. Establishments in this industry carry out operations necessary for producing and distributing newspapers, including gathering news; writing news columns, feature stories, and editorials; and selling and

preparing advertisements. These establishments may publish newspapers in print or electronic form.

The data published with NAICS code 511110 include the following SIC industry:

2711 Newspapers

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111101	27111	27111	511120A	2721C	2721C	511130N pt	2731J pt	27311 pt
5111101111	2711101	2711101	511120A111	2721C10	2721C10	511130N pt	2731J pt	27313 pt
5111101216	2711111	2711111	511120A216	2721C20	2721C20	511130N pt	2731J pt	27314 pt
5111101321	2711122	2711122	511120A321	2721C50	2721C50	511130N pt	2731J pt	2731B pt
5111101426	2711132	2711132	511120A326	2721C60	2721C60	511130N pt	2731J pt	2731C pt
5111101531	2711142	2711142	511120A331	2721C70	2721C70	511130N pt	2731J pt	2731D pt
5111101636	2711152	2711152	511120A436	2721C80	2721C80	511130N pt	2731J pt	2731E pt
5111101YVW	2711100	2711100	511120A541	2721C90	2721C90	511130N pt	2731J pt	2731F pt
			511120AYVW	2721C00	2721C00	511130N11	2731J22	2731100 pt
5111103	27112	27112	511120C	2721D	2721D	511130N16	2731J24	2731100 pt
5111103111	2711201	2711201	511120C111	2721D10	2721D10	511130N121	2731J26	2731100 pt
5111103216	2711211	2711211	511120C116	2721D15	2721D15	511130N126	2731J28	2731300 pt
5111103321	2711222	2711222	511120C121	2721D24	2721D24	511130N131	2731J32	2731300 pt
5111103426	2711232	2711232	511120C121	2721D24	2721D24	511130N136	2731J34	2731300 pt
5111103531	2711242	2711242	511120C191	2721D31	2721D31	511130N141	2731J36	2731300 pt
5111103636	2711252	2711252	511120C193	2721D33	2721D33	511130N146	2731J38	2731400 pt
5111103YVW	2711200	2711200	511120C196	2721D35	2721D35	511130N151 pt	2731J42 pt	2731B00 pt
			511120CYVW	2721D00	2721D00	511130N151 pt	2731J42 pt	2731C00 pt
5111105	27113	27113	511120W	27210	27210	511130N151 pt	2731J42 pt	2731D00 pt
5111105111	2711362	2711362	511120WYVW	2721000	2721000	511130N156	2731J44	2731E00 pt
5111105116	2711398	2711398	511120WYVW	2721002	2721002	511130N161	2731J46	2731F00 pt
5111105YVW	2711300	2711300				511130NYVW pt	2731J00 pt	2731100 pt
			5111301	27311	27311 pt	511130NYVW pt	2731J00 pt	2731300 pt
5111107	27114	27114	5111301111	2731111	2731111	511130NYVW pt	2731J00 pt	2731400 pt
5111107111	2711462	2711462	5111301216	2731112	2731112	511130NYVW pt	2731J00 pt	2731B00 pt
5111107116	2711498	2711498	5111301321	2731113	2731113	511130NYVW pt	2731J00 pt	2731E00 pt
5111107YVW	2711400	2711400	5111301426	2731114	2731114	511130NYVW pt	2731J00 pt	2731F00 pt
			5111301531	2731115	2731115	511130NYVW pt	2731J00 pt	2731100 pt
511110W	27110	27110	5111301636	2731116	2731116	511130NYVW pt	2731J00 pt	2731100 pt
511110WYVW	2711000	2711000	5111301741	2731121	2731121	511130NYVW pt	2731J00 pt	2731300 pt
511110WYVW	2711002	2711002	5111301846	2731123	2731123	511130NYVW pt	2731J00 pt	2731400 pt
			5111301951	2731125	2731125	511130NYVW pt	2731J00 pt	2731B00 pt
5111201	27211	27211	5111301A56	2731131	2731131	511130NYVW pt	2731J00 pt	2731C00 pt
5111201111	2721112	2721112	5111301YVW	2731100	2731100 pt	511130NYVW pt	2731J00 pt	2731D00 pt
5111201116	2721114	2721114				511130NYVW pt	2731J00 pt	2731E00 pt
5111201YVW	2721100	2721100	5111303	27313	27313 pt	511130W	27310 pt	27310 pt
			5111303111	2731315	2731315	511130WYVW	2731000 pt	2731000 pt
5111203	27213	27213	5111303216	2731317	2731317	511130WYVW	2731002 pt	2731002 pt
5111203111	2721324	2721324	5111303321	2731325	2731325			
5111203116	2721325	2721325	5111303426	2731327	2731327	5111401	27416	27416
5111203121	2721327	2721327	5111303531	2731335	2731335	5111401111	2741612	2741600 pt
5111203126	2721328	2721328	5111303636	2731337	2731337	5111401116	2741614	2741600 pt
5111203131	2721330	2721330	5111303791	2731345	2731345	5111401YVW	2741600	2741600 pt
5111203136	2721332	2721332	5111303896	2731347	2731347			
5111203141	2721334	2721334	5111303YVW	2731300	2731300 pt	5111403	27417	27417
5111203146	2721335	2721335				5111403111	2741713	2741713
5111203151	2721337	2721337	5111305	27314	27314 pt	5111403116	2741716	2741716
5111203156	2721338	2721338	5111305111 pt	2731412 pt	2731411	5111403YVW	2741700	2741700
			5111305111 pt	2731412 pt	2731413			
5111203161	2721340	2721340	5111305126	2731426	2731426	5111405	27418 pt	27418 pt
5111203166	2721342	2721342	5111305191	2731428	2731428	5111405100 pt	2741800 pt	2741800 pt
5111203171	2721344	2721344	5111305YVW	2731400	2731400 pt	5111405100 pt	2741814	2741815
5111203176	2721346	2721346						
5111203YVW	2721300	2721300	5111307	2731A	2731A	5111409 pt	2741B pt	2741B pt
			5111307100	2731A00	2731A00			
5111205	27214	27214	5111309	2731B	2731B pt	5111409 pt	73311	73310 pt
5111205111	2721424	2721424	5111309100 pt	2731B00	2731B00 pt	5111409121	7331100 pt	7331000 pt
5111205116	2721425	2721425	5111309100 pt	2731B16 pt	2731B15	5111409191	741B52	2741B00 pt
5111205121	2721427	2721427	5111309100 pt	2731B16 pt	2731B17	5111409YVW pt	2741B00 pt	2741B00 pt
5111205126	2721428	2721428				5111409YVW pt	7331100 pt	7331000 pt
5111205131	2721430	2721430	511130A	2731C	2731C pt			
5111205136	2721432	2721432	511130A100 pt	2731C00	2731C00 pt	511140W pt	27410 pt	27410 pt
5111205141	2721434	2721434	511130A100 pt	2731C74 pt	2731C73	511140WYVW pt	73310	73310 pt
5111205146	2721435	2721435	511130A100 pt	2731C74 pt	2731C75	511140WYVW pt	2741000 pt	2741000 pt
5111205151	2721437	2721437				511140WYVW pt	7331000	7331000 pt
5111205156	2721438	2721438	511130C	2731D	2731D pt	511140WYVW pt	2741002 pt	2741002 pt
			511130C111	2731D41	2731D41	511140WYVW pt	7331002	7331000 pt
5111205161	2721440	2721440	511130C216	2731D47	2731D47			
5111205166	2721442	2721442	511130C321	2731D51	2731D51	5111910 pt	27710 pt	27710 pt
5111205171	2721444	2721444	511130C426	2731D53	2731D53			
5111205176	2721446	2721446	511130CYVW	2731D00	2731D00 pt			
5111205YVW	2721400	2721400						
			511130E	2731E	2731E pt	5111910 pt	27711	27711
5111207	2721A	2721A	511130E111	2731E21	2731E21	5111910111	2771113	2771113
5111207111	2721A20	2721A20	511130E121	2731E41	2731E41	5111910216	2771115	2771115
5111207226	2721A50	2721A50	511130E121	2731E57	2731E57	5111910321 pt	2771123 pt	2771122
5111207231	2721A70	2721A70	511130EYVW	2731E00	2731E00 pt	5111910321 pt	2771123 pt	2771124
5111207236	2721A80	2721A80				5111910426	2771126	2771126
5111207441	2721A90	2721A90	511130G	2731F pt	2731F pt	5111910531	2771127	2771127
5111207YVW	2721A00	2721A00	511130G111	2731F13	2731F13	5111910536	2771129	2771129
			511130G121	2731F15	2731F15	5111910641 pt	2771134 pt	2771133
5111209	2721B	2721B	511130G191 pt	2731F18 pt	2731F17	5111910641 pt	2771134 pt	2771135
5111209111	2721B10	2721B10	511130G191 pt	2731F18 pt	2731F19	5111910YVW pt	2771000 pt	2771000 pt
5111209216	2721B20	2721B20	511130GYVW	2731F00 pt	2731F00 pt	5111910YVW pt	2771100	2771100
5111209321	2721B50	2721B50				5111910YVW	2771002 pt	2771002 pt
5111209326	2721B60	2721B60	511130J	2731G pt	2731G pt	5111991	27419	27419
5111209331	2721B70	2721B70	511130J100 pt	2731G00 pt	2731G00 pt	5111991100	2741900	2741900
5111209436	2721B80	2721B80	511130J100 pt	2731G59	2731G59			
5111209541	2721B90	2721B90				5111993	2741A	2741A
5111209YVW	2721B00	2721B00	511130L	2731H	2731H	5111993100	2741A00	2741A00
			511130L100	2731H00	2731H00			
						5111995 pt	27418 pt	27418 pt

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111995 pt.....	2741B pt.....	2741B pt	5111995346	2741B23	2741B23	5111995YWV pt....	2741800 pt	2741800 pt
5111995316	2741B13	2741B13	5111995352	2741B25	2741B25	5111995YWV pt....	2741B00 pt.....	2741B00 pt
5111995326	2741B15	2741B15	5111995356	2741B27	2741B27			
5111995331	2741B17	2741B17	5111995361	2741B29	2741B29	511199W	27410 pt	27410 pt
5111995336	2741B18	2741B18	5111995366	2741812	2741813	511199WYWW	2741000 pt	2741000 pt
5111995341	2741B20	2741B20	5111995391	2741B71	2741B71	511199WYWY	2741002 pt	2741002 pt

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511120	Periodical publishers	5 791	6 298	137 550	5 993 142	25 447	51 191	836 249	22 099 084	7 844 805	29 884 807	472 080
272100	Periodicals	N	6 298	137 550	5 993 142	25 447	51 191	836 249	22 099 084	7 844 805	29 884 807	472 080

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511120, PERIODICAL PUBLISHERS												
United States	2	6 298	1 159	137 550	5 993 142	25 447	51 191	836 249	22 099 084	7 844 805	29 884 807	472 080
Alabama	1	71	15	1 503	53 292	258	470	7 802	271 527	86 425	358 433	3 134
Arizona	4	125	12	1 155	37 723	416	804	11 875	98 592	46 372	145 614	2 440
California	2	831	166	15 689	663 485	3 155	6 381	101 815	2 524 721	933 360	3 455 058	58 704
Colorado	2	139	22	1 984	75 114	419	781	11 609	243 180	73 649	313 997	6 373
Connecticut	3	136	35	3 690	179 277	641	1 280	21 725	562 848	201 908	763 049	22 287
District of Columbia	1	91	26	4 876	252 296	603	1 394	23 280	856 258	307 940	1 161 400	16 701
Florida	3	416	49	4 925	166 217	1 268	2 350	34 986	526 154	232 593	757 938	11 976
Georgia	1	167	28	3 904	122 204	889	1 990	32 217	390 348	163 003	551 520	6 575
Hawaii *	1	35	6	349	11 077	165	291	4 374	26 715	14 869	41 576	862
Illinois	1	298	68	7 942	331 418	1 346	2 716	54 492	1 124 623	399 480	1 524 795	19 901
Indiana	5	83	16	1 039	27 250	272	457	6 846	72 076	33 678	105 692	1 462
Kentucky	2	50	7	444	12 943	137	224	3 152	32 457	14 987	47 497	1 625
Louisiana	4	55	2	295	7 979	148	268	3 962	19 590	8 169	27 754	397
Maine	2	37	4	268	9 215	59	91	1 195	26 983	10 713	37 572	746
Maryland	2	147	23	2 908	114 542	614	2 153	20 472	258 708	114 769	372 744	5 236
Massachusetts	3	261	46	5 066	243 086	864	1 826	29 271	712 928	215 581	927 251	16 842
Michigan	2	148	22	2 325	94 394	556	1 010	15 028	236 720	99 949	336 576	8 035
Minnesota	4	132	24	1 950	67 138	444	807	12 471	299 136	103 383	402 956	7 437
Nebraska	-	25	4	1 250	49 168	141	295	3 929	158 371	56 758	215 129	1 796
Nevada	5	47	2	329	9 040	138	238	3 359	22 667	10 626	33 311	371
New Hampshire	-	38	6	423	25 430	103	183	7 489	70 616	19 848	89 887	875
New Jersey	1	263	57	5 821	278 727	1 037	2 095	33 860	876 093	293 183	1 166 705	19 176
New Mexico	1	47	2	294	13 547	112	200	3 253	41 571	12 375	54 506	469
New York	1	709	214	35 051	1 952 007	3 838	7 957	153 830	8 354 376	2 903 736	11 237 876	151 159
North Carolina	2	119	15	1 774	55 074	408	734	10 464	239 095	81 637	320 457	4 265
Ohio	1	140	34	3 443	131 203	585	1 124	16 672	466 395	109 361	575 682	10 202
Oklahoma	8	46	4	488	14 814	108	184	2 379	95 934	24 575	120 885	1 902
Oregon	4	85	13	936	24 771	245	440	6 256	65 809	37 878	103 035	2 685
Pennsylvania	6	203	47	6 877	248 036	900	1 697	34 220	1 112 278	346 435	1 460 636	29 510
Rhode Island	2	18	6	287	7 483	61	118	1 843	23 130	7 872	30 757	224
South Carolina	5	51	2	263	7 325	114	212	3 411	20 055	8 919	29 001	464
Tennessee	1	105	15	2 930	113 724	574	1 011	13 373	269 511	52 578	310 303	8 535
Texas	4	306	36	4 029	133 319	1 329	2 808	47 105	442 953	162 815	603 786	7 840
Utah	7	38	3	339	9 607	176	342	5 191	27 354	11 487	38 784	469
Vermont	5	34	5	349	10 430	116	233	3 134	32 288	11 949	44 311	546
Virginia	3	188	39	2 674	103 533	644	1 286	21 539	280 616	111 550	392 318	9 710
Washington	2	123	15	1 220	35 855	373	684	11 234	92 188	33 390	125 593	2 866
Wisconsin	-	111	23	2 258	69 556	529	1 018	15 514	310 053	88 254	398 582	8 646

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
511120, PERIODICAL PUBLISHERS		511120, PERIODICAL PUBLISHERS—Con.	
Companies ¹	number.. 5 791	Value added	\$1,000.. 22 099 084
All establishments	number.. 6 298	Total inventories, beginning of year	\$1,000.. 1 350 331
Establishments with 1 to 19 employees	number.. 5 139	Finished goods inventories, beginning of year	\$1,000.. 552 841
Establishments with 20 to 99 employees	number.. 903	Work-in-process inventories, beginning of year	\$1,000.. 198 196
Establishments with 100 employees or more	number.. 256	Materials and supplies inventories, beginning of year	\$1,000.. 599 294
All employees	number.. 137 550	Total inventories, end of year	\$1,000.. 1 352 199
Total compensation ²	\$1,000.. 7 095 677	Finished goods inventories, end of year	\$1,000.. 600 676
Annual payroll	\$1,000.. 5 993 142	Work-in-process inventories, end of year	\$1,000.. 209 443
Total fringe benefits	\$1,000.. 1 102 535	Materials and supplies inventories, end of year	\$1,000.. 542 080
Production workers, average for year	number.. 25 447	Gross book value of total assets at beginning of year	\$1,000.. 3 644 495
Production workers on March 12	number.. 25 603	Total capital expenditures (new and used)	\$1,000.. 472 080
Production workers on May 12	number.. 25 915	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 88 162
Production workers on August 12	number.. 26 204	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 383 918
Production workers on November 12	number.. 25 830	Total retirements ²	\$1,000.. 200 542
Production-worker hours	1,000.. 51 191	Gross book value of total assets at end of year	\$1,000.. 3 916 033
Production-worker wages	\$1,000.. 836 249	Total depreciation during year ²	\$1,000.. 339 332
Total cost of materials	\$1,000.. 7 844 805	Total rental payments ²	\$1,000.. 544 794
Cost of materials, parts, containers, etc., consumed	\$1,000.. 3 276 819	Buildings and other structures rental payments ²	\$1,000.. 461 301
Cost of resales	\$1,000.. 158 010	Machinery and equipment rental payments ²	\$1,000.. 83 493
Cost of fuels	\$1,000.. 14 759	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 13 772
Cost of purchased electricity	\$1,000.. 48 685	Response coverage ratio ⁴	percent.. 59
Cost of contract work	\$1,000.. 4 346 532	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 22 301
Quantity of electricity purchased for heat and power	1,000 kWh.. 573 349	Response coverage ratio ⁴	percent.. 59
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 106 439
Total value of shipments	\$1,000.. 29 884 807	Response coverage ratio ⁴	percent.. 59
Primary products value of shipments	\$1,000.. 27 623 719	Cost of purchased legal services ³	\$1,000.. 44 124
Secondary products value of shipments	\$1,000.. 1 097 502	Response coverage ratio ⁴	percent.. 59
Total miscellaneous receipts	\$1,000.. 1 163 586	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 25 484
Value of resales	\$1,000.. 187 012	Response coverage ratio ⁴	percent.. 59
Contract receipts	\$1,000.. 5 871	Cost of purchased advertising services ³	\$1,000.. 238 429
Other miscellaneous receipts	\$1,000.. 970 703	Response coverage ratio ⁴	percent.. 59
Primary products specialization ratio	percent.. 96	Cost of purchased software and other data processing services ³	\$1,000.. 31 000
Value of primary products shipments made in all industries	\$1,000.. 28 806 066	Response coverage ratio ⁴	percent.. 59
Value of primary products shipments made in this industry	\$1,000.. 27 623 719	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 971
Value of primary products shipments made in other industries	\$1,000.. 1 182 347	Response coverage ratio ⁴	percent.. 59
Coverage ratio	percent.. 95		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511120, PERIODICAL PUBLISHERS												
All establishments	2	6 298	1 159	137 550	5 993 142	25 447	51 191	836 249	22 099 084	7 844 805	29 884 807	472 080
Establishments with 1 to 4 employees	7	3 286	—	6 443	221 059	4 377	7 491	128 734	739 298	327 969	1 065 739	16 258
Establishments with 5 to 9 employees	4	1 050	—	6 912	205 558	3 546	6 952	110 020	651 093	295 530	947 172	11 866
Establishments with 10 to 19 employees	3	803	—	10 845	391 774	5 346	10 357	165 118	1 143 455	508 852	1 649 630	25 719
Establishments with 20 to 49 employees	2	639	639	19 562	784 714	5 804	11 142	182 138	2 609 305	1 043 148	3 651 301	62 791
Establishments with 50 to 99 employees	2	264	264	18 093	731 772	1 776	3 505	49 220	2 394 704	867 066	3 252 421	61 871
Establishments with 100 to 249 employees	2	161	161	24 704	1 139 396	1 866	4 089	68 442	4 698 448	1 578 003	6 277 475	91 454
Establishments with 250 to 499 employees	2	63	63	21 218	1 030 658	1 612	4 815	82 048	3 678 940	1 308 176	4 985 334	87 973
Establishments with 500 to 999 employees	2	25	25	17 373	863 120	726	2 123	42 868	3 606 230	1 011 214	4 605 777	66 889
Establishments with 1,000 to 2,499 employees	—	6	6	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	1	1	D	D	D	D	D	D	D	D	D
Administrative records ²	8	3 314	—	10 402	227 590	5 214	9 131	132 659	763 037	358 044	1 121 093	17 626

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511120	Periodical publishers	6 298	137 550	5 993 142	25 447	51 191	836 249	22 099 084	7 844 805	29 884 807	472 080
5111201	Farm periodical publishing (receipts from subscriptions, sales, and advertising)	64	1 036	36 809	368	725	11 056	95 227	35 265	129 108	1 784
5111203	Specialized business and professional periodical publishing (receipts from subscriptions and single copy sales)	308	20 830	921 494	2 317	4 703	81 525	3 211 077	1 314 071	4 508 536	82 523
5111205	Specialized business and professional periodical publishing (receipts from advertising)	701	34 834	1 640 526	4 709	9 366	149 184	5 574 967	1 410 426	6 968 839	140 145
5111207	General and consumer periodical publishing (receipts from subscriptions)	162	8 845	400 297	1 449	3 121	55 361	2 055 066	678 420	2 723 538	36 641
5111209	General and consumer periodical publishing (receipts from single copy sales)	90	4 387	201 581	605	1 206	18 783	866 681	580 689	1 445 275	12 218
511120A	General and consumer periodical publishing (receipts from advertising)	502	26 220	1 302 199	3 429	6 700	111 742	6 101 452	2 008 911	8 105 450	91 667
511120C	Other periodical publishing, except shopping news, catalogs, or directories, nec.....	201	9 206	315 326	1 973	3 658	48 302	918 174	359 154	1 267 894	36 539

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511120	Periodicals	N	X	X	28 806 066	N	X	X	20 941 733
5111201	Farm periodical publishing (receipts from subscriptions, sales, and advertising)	N	X	X	133 707	N	X	X	224 378
51112011	Farm periodicals (receipts from subscriptions, sales, and advertising)	N	X	X	132 800	N	X	X	N
5111201111	Farm periodicals (receipts from subscriptions and single copy sales)	34	X	X	40 319	38	X	X	78 554
5111201116	Farm periodicals (receipts from advertising)	56	X	X	92 481	57	X	X	145 281
5111201Y	Farm periodicals (receipts from subscriptions, sales, and advertising), nsk	N	X	X	907	N	X	X	N
5111201YWV	Farm periodicals (receipts from subscriptions, sales, and advertising), nsk	N	X	X	907	N	X	X	Z
5111203	Specialized business and professional periodical publishing (receipts from subscriptions and single copy sales)	N	X	X	4 559 576	N	X	X	2 352 033
51112031	Specialized business and professional periodicals (receipts from subscriptions and single copy sales)	N	X	X	4 451 894	N	X	X	N
5111203111	Manufacturing (excluding electronics) business publications (paid circulation, single copy and subscription receipts)	13	X	X	D	16	X	X	31 037
5111203116	Wholesale and retail trade (including merchandising) business publications (paid circulation, single copy and subscription receipts)	29	X	X	D	30	X	X	59 583
5111203121	Medical and health care business publications (paid circulation, single copy and subscription receipts)	45	X	X	295 260	52	X	X	247 413
5111203126	Electronics-data management business publications (paid circulation, single copy and subscription receipts)	24	X	X	83 756	23	X	X	66 761
5111203131	Service (excluding data management) business publications (paid circulation, single copy and subscription receipts)	20	X	X	69 037	29	X	X	416 365
5111203136	Other business publications, nec (paid circulation, single copy and subscription receipts)	195	X	X	2 986 273	198	X	X	894 153
5111203141	Manufacturing (excluding electronics) business publications (controlled circulation, single copy and subscription receipts)	15	X	X	16 359	12	X	X	28 281
5111203146	Wholesale and retail trade (including merchandising) business publications (controlled circulation, single copy and subscription receipts)	12	X	X	15 902	10	X	X	6 073
5111203151	Medical and health care business publications (controlled circulation, single copy and subscription receipts)	27	X	X	34 932	23	X	X	40 629
5111203156	Electronics-data management business publications (controlled circulation, single copy and subscription receipts)	11	X	X	13 004	7	X	X	5 473
5111203161	Service (excluding data management) business publications (controlled circulation, single copy and subscription receipts)	6	X	X	8 724	7	X	X	7 088
5111203166	Other business publications, nec (controlled circulation, single copy and subscription receipts)	53	X	X	157 434	48	X	X	54 048
5111203171	Scholarly journals (subscriptions and single copy sales)	72	X	X	354 999	67	X	X	185 810
5111203176	Other professional journals (subscriptions and single copy sales)	67	X	X	203 802	57	X	X	158 623
5111203Y	Specialized business and professional periodicals (receipts from subscriptions and single copy sales), nsk	N	X	X	107 682	N	X	X	N
5111203YWV	Specialized business and professional periodicals (receipts from subscriptions and single copy sales), nsk	N	X	X	107 682	N	X	X	150 696
5111205	Specialized business and professional periodical publishing (receipts from advertising)	N	X	X	5 293 623	N	X	X	3 723 044
51112051	Specialized business and professional periodicals (receipts from advertising)	N	X	X	5 041 196	N	X	X	N
5111205111	Manufacturing (excluding electronics) business publications (paid circulation, advertising receipts)	11	X	X	D	13	X	X	16 905
5111205116	Wholesale and retail trade (including merchandising) business publications (paid circulation, advertising receipts)	48	X	X	D	40	X	X	159 519
5111205121	Medical and health care business publications (paid circulation, advertising receipts)	37	X	X	123 095	41	X	X	104 714
5111205126	Electronics-data management business publications (paid circulation, advertising receipts)	19	X	X	112 382	20	X	X	187 825

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511120	Periodicals—Con.								
5111205	Specialized business and professional periodical publishing (receipts from advertising)—Con.								
51112051	Specialized business and professional periodicals (receipts from advertising)—Con.								
5111205131	Service (excluding data management) business publications (paid circulation, advertising receipts)	23	X	X	79 658	28	X	X	64 800
5111205136	Other business publications, nec (paid circulation, advertising receipts)	170	X	X	1 097 590	179	X	X	771 966
5111205141	Manufacturing (excluding electronics) business publications (controlled circulation, advertising receipts)	43	X	X	264 728	36	X	X	126 045
5111205146	Wholesale and retail trade (including merchandising) business publications (controlled circulation, advertising receipts)	58	X	X	254 986	66	X	X	200 699
5111205151	Medical and health care business publications (controlled circulation, advertising receipts)	65	X	X	330 787	58	X	X	267 964
5111205156	Electronics-data management business publications (controlled circulation, advertising receipts)	27	X	X	224 963	27	X	X	72 731
5111205161	Service (excluding data management) business publications (controlled circulation, advertising receipts)	36	X	X	288 753	36	X	X	119 603
5111205166	Other business publications, nec (controlled circulation, advertising receipts)	209	X	X	1 295 980	165	X	X	864 548
5111205171	Scholarly journals (advertising receipts)	26	X	X	93 206	20	X	X	57 346
5111205176	Other professional journals (advertising receipts)	54	X	X	158 723	52	X	X	64 648
5111205Y	Specialized business and professional periodicals (receipts from advertising), nsk	N	X	X	252 427	N	X	X	N
5111205YVV	Specialized business and professional periodicals (receipts from advertising), nsk	N	X	X	252 427	N	X	X	643 731
5111207	General and consumer periodical publishing (receipts from subscriptions)	N	X	X	3 520 429	N	X	X	3 572 860
51112071	Women's, home, and fashion periodicals, including domestic science, child care, housekeeping, health, gardening, etc. (receipts from subscriptions)	N	X	X	822 732	N	X	X	N
5111207116	Women's, home, and fashion periodicals, including domestic science, child care, housekeeping, health, gardening, etc. (receipts from subscriptions)	38	X	X	822 732	35	X	X	620 547
51112072	General news, business news, and regional, metropolitan, and city periodicals (receipts from subscriptions)	N	X	X	405 536	N	X	X	N
5111207221	General news periodicals, including weeklies and biweeklies with news of interest to the general public (receipts from subscriptions)	21	X	X	207 819	18	X	X	414 576
5111207226	Business news periodicals, concerning business and industry, directed to a broader readership than those in business for a living (receipts from subscriptions)	17	X	X	161 531	17	X	X	166 229
5111207231	Regional, metropolitan, and city magazines (receipts from subscriptions)	34	X	X	36 186	31	X	X	73 100
51112073	Special interest periodicals, including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc. (receipts from subscriptions)	N	X	X	1 276 124	N	X	X	N
5111207336	Special interest periodicals, including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc. (receipts from subscriptions)	234	X	X	1 276 124	222	X	X	1 189 269
51112074	General interest periodicals, including general articles, pictures, fiction, literature, geography, travel, history, humor, etc. (receipts from subscriptions)	N	X	X	959 087	N	X	X	N
5111207441	General interest periodicals, including general articles, pictures, fiction, literature, geography, travel, history, humor, etc. (receipts from subscriptions)	54	X	X	959 087	56	X	X	977 726

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendices]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511120	Periodicals—Con.								
5111207	General and consumer periodical publishing (receipts from subscriptions)—Con.								
5111207Y	General and consumer periodicals (receipts from subscriptions), nsk	N	X	X	56 950	N	X	X	N
5111207YVV	General and consumer periodicals (receipts from subscriptions), nsk	N	X	X	56 950	N	X	X	131 413
5111209	General and consumer periodical publishing (receipts from single copy sales)	N	X	X	2 143 455	N	X	X	1 895 977
51112091	Comics (receipts from subscriptions and single copy sales)	N	X	X	293 211	N	X	X	N
5111209111	Comics (receipts from subscriptions and single copy sales)	14	X	X	293 211	14	X	X	246 787
51112092	Women's, home, and fashion periodicals, including domestic science, child care, housekeeping, health, gardening, etc. (receipts from single copy sales)	N	X	X	525 709	N	X	X	N
5111209216	Women's, home, and fashion periodicals, including domestic science, child care, housekeeping, health, gardening, etc. (receipts from single copy sales)	28	X	X	525 709	32	X	X	382 919
51112093	General news, business news, and regional, metropolitan, and city periodicals (receipts from single copy sales)	N	X	X	69 812	N	X	X	N
5111209321	General news periodicals, including weeklies and biweeklies with news of interest to the general public (receipts from single copy sales)	11	X	X	57 393	14	X	X	122 477
5111209326	Business news periodicals, concerning business and industry, directed to a broader readership than those in business for a living (receipts from single copy sales)	4	X	X	3 010	5	X	X	18 624
5111209331	Regional, metropolitan, and city magazines (receipts from single copy sales)	18	X	X	9 409	14	X	X	6 846
51112094	Special interest periodicals, including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc. (receipts from single copy sales)	N	X	X	1 001 959	N	X	X	N
5111209436	Special interest periodicals, including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc. (receipts from single copy sales)	167	X	X	1 001 959	159	X	X	688 525
51112095	General interest periodicals, including general articles, pictures, fiction, literature, geography, travel, history, humor, etc. (receipts from single copy sales)	N	X	X	135 501	N	X	X	N
5111209541	General interest periodicals, including general articles, pictures, fiction, literature, geography, travel, history, humor, etc. (receipts from single copy sales)	38	X	X	135 501	36	X	X	316 417
5111209Y	General and consumer periodicals (receipts from single copy sales), nsk	N	X	X	117 263	N	X	X	N
5111209YVV	General and consumer periodicals (receipts from single copy sales), nsk	N	X	X	117 263	N	X	X	113 382
511120A	General and consumer periodical publishing (receipts from advertising)	N	X	X	6 481 749	N	X	X	5 136 572
511120A1	Comics (receipts from advertising)	N	X	X	7 607	N	X	X	N
511120A111	Comics (receipts from advertising)	5	X	X	7 607	6	X	X	7 567
511120A2	Women's, home, and fashion periodicals, including domestic science, child care, housekeeping, health, gardening, etc. (receipts from advertising)	N	X	X	2 168 820	N	X	X	N
511120A216	Women's, home, and fashion periodicals, including domestic science, child care, housekeeping, health, gardening, etc. (receipts from advertising)	61	X	X	2 168 820	48	X	X	1 472 363
511120A3	General news, business news, and regional, metropolitan, and city periodicals (receipts from advertising)	N	X	X	1 232 882	N	X	X	N
511120A321	General news periodicals, including weeklies and biweeklies with news of interest to the general public (receipts from advertising)	53	X	X	471 107	55	X	X	626 551
511120A326	Business news periodicals, concerning business and industry, directed to a broader readership than those in business for a living (receipts from advertising)	23	X	X	432 844	23	X	X	408 225

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511120	Periodicals—Con.								
511120A	General and consumer periodical publishing (receipts from advertising)—Con.								
511120A3	General news, business news, and regional, metropolitan, and city periodicals (receipts from advertising)—Con.								
511120A331	Regional, metropolitan, and city magazines (receipts from advertising).....	95	X	X	328 931	74	X	X	126 202
511120A4	Special interest periodicals, including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc. (receipts from advertising).....	N	X	X	2 169 320	N	X	X	N
511120A436	Special interest periodicals, including hobby, sports, entertainment, art, photography, science, automotive, aviation, etc. (receipts from advertising).....	293	X	X	2 169 320	268	X	X	1 511 287
511120A5	General interest periodicals, including general articles, pictures, fiction, literature, geography, travel, history, humor, etc. (receipts from advertising).....	N	X	X	811 845	N	X	X	N
511120A541	General interest periodicals, including general articles, pictures, fiction, literature, geography, travel, history, humor, etc. (receipts from advertising).....	80	X	X	811 845	70	X	X	732 187
511120AY	General and consumer periodicals (receipts from advertising), nsk.....	N	X	X	91 275	N	X	X	N
511120AYWV	General and consumer periodicals (receipts from advertising), nsk.....	N	X	X	91 275	N	X	X	252 190
511120C	Other periodical publishing, except shopping news, catalogs, or directories, nec.....	N	X	X	1 090 096	N	X	X	697 582
511120C1	Other periodicals, except shopping news, catalogs, or directories, nec.....	N	X	X	1 084 562	N	X	X	N
511120C111	Religious periodicals, including religion, theology, church bulletins, local church papers, etc. (receipts from subscriptions and single copy sales).....	69	X	X	454 447	53	X	X	242 179
511120C116	Religious periodicals, including religion, theology, church bulletins, local church papers, etc. (receipts from advertising).....	41	X	X	79 825	32	X	X	51 063
511120C121	Magazine and comic supplements for Sunday newspapers (receipts from advertising and copy sales).....	4	X	X	D	4	X	X	1 591
511120C191	Other periodicals, nec, except shopping news, catalogs, and directories (receipts from subscriptions).....	40	X	X	D	47	X	X	169 848
511120C193	Other periodicals, nec, except shopping news, catalogs, and directories (receipts from single copy sales).....	13	X	X	28 839	18	X	X	37 047
511120C196	Other periodicals, nec, except shopping news, catalogs, and directories (receipts from advertising).....	92	X	X	162 071	64	X	X	108 343
511120CY	Other periodicals, except shopping news, catalogs, or directories, nec, nsk.....	N	X	X	5 534	N	X	X	N
511120CYWV	Other periodicals, except shopping news, catalogs, or directories, nec, nsk.....	N	X	X	5 534	N	X	X	87 511
511120W	Periodical publishers, nsk, total.....	N	X	X	5 583 431	N	X	X	3 339 287
511120WY	Periodical publishers, nsk, total.....	N	X	X	5 583 431	N	X	X	N
511120WYWV	Periodical publishers, nsk, for nonadministrative-record establishments.....	N	X	X	4 612 576	N	X	X	2 907 281
511120WYWY	Periodical publishers, nsk, for administrative-record establishments.....	N	X	X	970 855	N	X	X	432 006

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)		
		1997	1992	
5111201	FARM PERIODICAL PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS, SALES, AND ADVERTISING)			
	United States	133 707	224 378	
	California	8 310	2 903	
	Illinois	6 288	N	
	Missouri	14 650	5 711	
	New York	15 621	12 798	
	Texas	3 398	2 955	
Wisconsin	2 851	33 447		
5111203	SPECIALIZED BUSINESS AND PROFESSIONAL PERIODICAL PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS AND SINGLE COPY SALES)			
	United States	4 559 576	2 352 033	
	California	512 892	168 210	
	Colorado	18 443	11 916	
	Connecticut	138 144	45 774	
	District of Columb	225 065	218 344	
	Florida	90 044	9 151	
	Georgia	75 667	65 986	
	Illinois	96 454	227 097	
	Indiana	9 929	7 479	
	Iowa	2 706	N	
	Kansas	13 197	6 313	
	Maryland	174 076	60 239	
	Massachusetts	178 705	83 080	
	Michigan	36 205	30 713	
	Minnesota	18 788	33 806	
	New Hampshire	12 116	N	
	New Jersey	125 562	132 359	
	New York	2 206 918	829 211	
	Ohio	16 768	30 655	
	Oregon	5 169	2 410	
	Pennsylvania	278 541	153 252	
	Tennessee	5 290	7 645	
	Texas	31 528	52 764	
	Utah	2 596	N	
	Vermont	7 597	6 752	
	Virginia	59 980	43 379	
	Washington	11 064	4 875	
	Wisconsin	15 117	7 094	
	5111205	SPECIALIZED BUSINESS AND PROFESSIONAL PERIODICAL PUBLISHING (RECEIPTS FROM ADVERTISING)		
		United States	5 293 623	3 723 044
		Alabama	31 880	5 316
Arizona		34 597	11 624	
California		540 041	312 610	
Colorado		39 674	33 351	
Connecticut		71 307	104 103	
District of Columb		231 614	69 298	
Florida		29 379	54 999	
Georgia		136 347	42 902	
Hawaii		10 916	N	
Illinois		528 919	343 355	
Indiana		16 166	22 550	
Iowa		14 142	N	
Kansas		39 300	52 024	
Kentucky		11 255	N	
Louisiana		3 445	N	
Maine		13 750	9 135	
Maryland		53 910	25 005	
Massachusetts		337 232	159 958	
Michigan		99 496	77 185	
Minnesota		159 733	93 491	
Mississippi		3 552	N	
Missouri		19 823	29 634	
Nevada		3 463	N	
New Hampshire		32 270	53 564	
New Jersey		571 431	357 030	
New Mexico		5 402	N	
New York		1 359 415	1 233 448	
North Carolina		69 056	13 670	
Ohio		185 461	206 005	
Oregon		7 098	21 877	
Pennsylvania	235 019	122 568		
South Carolina	4 153	N		
Tennessee	17 197	22 200		
Texas	75 604	48 830		
Utah	3 342	N		
Vermont	4 914	N		
Virginia	68 966	34 335		
Washington	22 144	17 581		
Wisconsin	72 725	30 497		

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111207	GENERAL AND CONSUMER PERIODICAL PUBLISHING (RECEIPTS FROM SUBSCRIPTIONS)		
	United States	3 520 429	3 572 860
	Arizona	2 162	N
	California	206 687	195 390
	Colorado	17 458	9 906
	Connecticut	70 735	45 498
	Florida	72 408	32 723
	Georgia	12 113	7 456
	Illinois	125 888	168 521
	Indiana	2 942	N
	Kansas	12 780	5 463
	Maryland	21 816	5 098
	Massachusetts	10 551	34 351
	Michigan	6 782	N
	Minnesota	19 417	10 344
	Missouri	10 406	N
	New Jersey	28 452	13 047
	New York	1 557 121	1 874 329
	North Carolina	32 266	22 666
	Ohio	20 824	16 773
	Tennessee	13 420	N
Texas	29 888	37 350	
Virginia	39 083	19 845	
5111209	GENERAL AND CONSUMER PERIODICAL PUBLISHING (RECEIPTS FROM SINGLE COPY SALES)		
	United States	2 143 455	1 895 977
	Arizona	5 932	3 343
	California	319 506	204 243
	Colorado	7 137	4 175
	Connecticut	65 670	22 045
	District of Columb	15 876	8 509
	Florida	97 674	61 738
	Georgia	4 471	N
	Illinois	80 231	80 995
	Maine	2 095	N
	Maryland	5 167	4 617
	Massachusetts	5 914	10 126
	Minnesota	8 289	4 525
	Missouri	5 747	6 440
	New Mexico	2 528	N
	New York	1 013 697	1 056 709
	North Carolina	8 447	3 361
	Ohio	8 913	2 767
	Oregon	14 886	N
	Pennsylvania	203 743	N
Tennessee	6 456	6 011	
Texas	18 312	N	
Virginia	19 685	17 699	
Washington	4 568	5 551	
Wisconsin	14 418	15 304	
511120A	GENERAL AND CONSUMER PERIODICAL PUBLISHING (RECEIPTS FROM ADVERTISING)		
	United States	6 481 749	5 136 572
	Alabama	134 844	N
	Arizona	26 055	8 777
	California	693 222	492 096
	Colorado	27 379	14 866
	Connecticut	199 859	108 509
	District of Columb	161 730	N
	Florida	163 029	64 786
	Georgia	179 377	48 613
	Hawaii	19 302	15 813
	Illinois	248 547	145 594
	Indiana	17 341	3 526
	Kansas	6 688	4 165
	Louisiana	7 679	N
	Maine	4 505	N
	Maryland	41 357	13 101
	Massachusetts	72 605	42 201
	Michigan	27 123	19 917
	Minnesota	33 806	16 933
	Missouri	32 344	16 852
New Hampshire	7 288	12 468	
New Jersey	57 104	39 678	
New York	3 110 175	3 209 123	
North Carolina	29 407	32 181	
Ohio	115 212	25 298	
Oklahoma	12 766	2 812	
Oregon	13 507	9 012	
Pennsylvania	369 030	N	
South Carolina	9 432	N	
Tennessee	50 463	2 996	
Texas	53 071	29 588	

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
511120A	GENERAL AND CONSUMER PERIODICAL PUBLISHING (RECEIPTS FROM ADVERTISING)—Con.		
	Utah	2 236	N
	Virginia	33 924	13 890
	Washington	17 096	6 793
	Wisconsin	22 797	38 679
511120C	OTHER PERIODICAL PUBLISHING, EXCEPT SHOPPING NEWS, CATALOGS, OR DIRECTORIES, NEC		
	United States	1 090 096	697 582
	Arizona	3 153	N
	California	73 977	80 233
	Connecticut	58 209	N
	Florida	65 683	26 284
	Georgia	5 519	N
	Illinois	46 563	64 587
	Maryland	21 381	38 016
	Massachusetts	33 824	24 693
	Michigan	9 736	7 257
	Minnesota	15 777	16 041
	Missouri	63 077	40 483
	New Jersey	8 057	13 567
	New York	268 841	70 928
	North Carolina	16 434	N
	Ohio	82 973	71 518
	Oregon	7 709	2 219
	Pennsylvania	4 095	7 525
	Texas	25 380	14 298
	Virginia	6 974	4 526
	Washington	12 989	N
	Wisconsin	8 920	5 688

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
511120	PERIODICAL PUBLISHERS				
32212203	Newsprint	X	103 565	X	66 344
32200015	Coated paper	X	973 832	X	986 094
32212019	Uncoated paper	X	125 159	X	185 154
32591003	Printing ink	X	130 733	X	220 783
00970099	All other materials and components, parts, containers, and supplies	X	238 138	X	159 641
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 705 392	X	881 557

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

511120 PERIODICAL PUBLISHERS

This U.S. industry comprises establishments known as magazine or periodical publishers. These establishments carry out the operations necessary for producing and distributing magazines and other periodicals, such as gathering, writing, and editing articles, and selling and preparing advertisements. These establishments may publish magazines and other periodicals in print or electronic form.

The data published with NAICS code 511120 include the following SIC industry:

2721 Periodicals

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 511120 do not include establishments primarily engaged in publishing shopping news. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111101	27111	27111	511120A	2721C	2721C	511130N pt	2731J pt	27311 pt
5111101111	2711101	2711101	511120A111	2721C10	2721C10	511130N pt	2731J pt	27313 pt
5111101216	2711111	2711111	511120A216	2721C20	2721C20	511130N pt	2731J pt	27314 pt
5111101321	2711122	2711122	511120A321	2721C50	2721C50	511130N pt	2731J pt	2731B pt
5111101426	2711132	2711132	511120A326	2721C60	2721C60	511130N pt	2731J pt	2731C pt
5111101531	2711142	2711142	511120A331	2721C70	2721C70	511130N pt	2731J pt	2731D pt
5111101636	2711152	2711152	511120A436	2721C80	2721C80	511130N pt	2731J pt	2731E pt
5111101YVW	2711100	2711100	511120A541	2721C90	2721C90	511130N pt	2731J pt	2731F pt
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			511130L100	2731H00	2731H00			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
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1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511130	Book publishers	2 541	2 684	89 898	3 642 824	22 695	41 365	676 855	16 626 883	6 410 352	22 648 251	462 365
273110	Book publishing (pt)	N	2 684	89 898	3 642 824	22 695	41 365	676 855	16 626 883	6 410 352	22 648 251	462 365

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511130, BOOK PUBLISHERS												
United States	1	2 684	510	89 898	3 642 824	22 695	41 365	676 855	16 626 883	6 410 352	22 648 251	462 365
Arizona	3	61	5	360	12 432	141	239	4 069	24 924	10 002	35 145	865
California	2	380	65	7 500	306 385	1 947	3 570	60 337	1 383 938	419 549	1 769 358	31 205
Colorado	3	69	8	2 346	80 846	995	1 732	28 852	305 398	41 212	345 182	8 188
Connecticut	2	72	17	1 233	50 423	464	927	15 192	220 608	107 367	323 825	2 454
District of Columbia.....	1	18	2	168	6 212	76	113	2 310	33 302	13 565	45 995	232
Florida	2	102	13	1 937	75 548	363	717	13 106	382 103	87 325	462 968	4 931
Georgia	3	39	11	495	14 156	288	510	7 080	61 762	20 057	91 947	3 482
Illinois	3	148	44	5 717	224 973	836	1 472	29 046	1 129 469	528 860	1 618 560	22 732
Indiana	—	34	8	1 716	68 393	701	1 408	25 307	326 860	92 711	424 499	9 489
Iowa	5	22	7	1 069	37 017	166	315	3 173	132 658	32 719	153 541	3 130
Kentucky	1	18	5	413	12 562	109	200	3 601	60 001	15 829	74 761	1 203
Louisiana	4	13	4	189	3 346	55	83	1 117	11 547	5 501	16 830	421
Maine	3	25	2	135	3 670	63	109	1 667	11 872	5 347	17 013	348
Massachusetts	—	115	36	6 267	265 386	989	1 774	35 169	967 198	380 178	1 354 712	27 863
Michigan	—	62	10	1 140	38 730	315	500	10 483	185 148	117 328	304 820	4 460
Missouri	—	47	10	4 833	136 693	1 920	4 377	41 903	844 488	566 176	1 378 778	30 897
Nebraska	—	9	3	255	7 090	141	217	2 699	16 718	7 516	24 424	831
New Hampshire	7	20	2	163	5 136	60	94	1 702	20 505	9 452	29 729	525
New Jersey	—	97	30	4 956	235 942	1 097	2 115	42 993	886 587	419 672	1 275 607	31 792
New York	1	329	71	18 992	969 137	3 432	5 593	79 470	5 430 764	2 155 330	7 348 018	81 122
North Carolina	1	70	13	1 058	32 793	321	568	11 555	136 724	48 457	187 739	6 592
Ohio	—	68	9	3 184	127 922	1 786	3 243	72 458	442 389	132 872	579 742	23 381
Oklahoma	5	24	4	405	13 714	115	219	4 457	45 657	29 510	74 780	1 400
Oregon	—	48	8	556	17 743	184	259	6 270	76 002	34 594	106 959	4 629
Pennsylvania	—	80	24	4 165	157 657	635	1 099	17 456	754 559	329 744	1 083 288	26 441
Tennessee	1	43	9	1 206	34 432	580	1 254	21 936	127 796	131 341	245 047	3 559
Texas	—	141	25	4 970	163 795	885	1 578	24 607	746 993	162 041	900 910	15 589
Utah	5	34	2	182	5 578	67	114	1 608	20 853	10 245	30 960	570
Virginia	—	54	7	1 364	43 525	593	1 122	13 308	146 160	34 988	181 858	6 840
Washington	2	81	4	578	18 964	213	383	6 819	75 431	26 193	107 538	1 238
Wisconsin	—	41	7	1 039	32 288	623	1 061	22 447	148 891	99 136	246 073	5 518

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
511130, BOOK PUBLISHERS		511130, BOOK PUBLISHERS—Con.	
Companies ¹	number.. 2 541	Value added	\$1,000.. 16 626 883
All establishments	number.. 2 684	Total inventories, beginning of year	\$1,000.. 3 314 604
Establishments with 1 to 19 employees	number.. 2 174	Finished goods inventories, beginning of year	\$1,000.. 2 579 709
Establishments with 20 to 99 employees	number.. 361	Work-in-process inventories, beginning of year	\$1,000.. 437 809
Establishments with 100 employees or more	number.. 149	Materials and supplies inventories, beginning of year	\$1,000.. 297 086
All employees	number.. 89 898	Total inventories, end of year	\$1,000.. 3 638 805
Total compensation ²	\$1,000.. 4 357 748	Finished goods inventories, end of year	\$1,000.. 2 918 364
Annual payroll	\$1,000.. 3 642 824	Work-in-process inventories, end of year	\$1,000.. 488 138
Total fringe benefits	\$1,000.. 714 924	Materials and supplies inventories, end of year	\$1,000.. 232 303
Production workers, average for year	number.. 22 695	Gross book value of total assets at beginning of year	\$1,000.. 2 931 925
Production workers on March 12	number.. 22 503	Total capital expenditures (new and used)	\$1,000.. 462 365
Production workers on May 12	number.. 22 518	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 91 438
Production workers on August 12	number.. 22 953	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 370 927
Production workers on November 12	number.. 22 806	Total retirements ²	\$1,000.. 270 249
Production-worker hours	1,000.. 41 365	Gross book value of total assets at end of year	\$1,000.. 3 124 041
Production-worker wages	\$1,000.. 676 855	Total depreciation during year ²	\$1,000.. 327 254
Total cost of materials	\$1,000.. 6 410 352	Total rental payments ²	\$1,000.. 308 295
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 936 883	Buildings and other structures rental payments ²	\$1,000.. 238 025
Cost of resales	\$1,000.. 331 860	Machinery and equipment rental payments ²	\$1,000.. 70 270
Cost of fuels	\$1,000.. 13 101	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 18 058
Cost of purchased electricity	\$1,000.. 48 059	Response coverage ratio ⁴	percent.. 73
Cost of contract work	\$1,000.. 4 080 449	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 32 374
Quantity of electricity purchased for heat and power	1,000 kWh.. 514 119	Response coverage ratio ⁴	percent.. 73
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Cost of purchased communications services ³	\$1,000.. 89 674
Total value of shipments	\$1,000.. 22 648 251	Response coverage ratio ⁴	percent.. 73
Primary products value of shipments	\$1,000.. 20 052 913	Cost of purchased legal services ³	\$1,000.. 27 165
Secondary products value of shipments	\$1,000.. 1 424 721	Response coverage ratio ⁴	percent.. 73
Total miscellaneous receipts	\$1,000.. 1 170 617	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 24 799
Value of resales	\$1,000.. 669 573	Response coverage ratio ⁴	percent.. 73
Contract receipts	\$1,000.. D	Cost of purchased advertising services ³	\$1,000.. 450 210
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 73
Primary products specialization ratio	percent.. 93	Cost of purchased software and other data processing services ³	\$1,000.. 57 274
Value of primary products shipments made in all industries	\$1,000.. 20 858 877	Response coverage ratio ⁴	percent.. 73
Value of primary products shipments made in this industry	\$1,000.. 20 052 913	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 2 862
Value of primary products shipments made in other industries	\$1,000.. 805 964	Response coverage ratio ⁴	percent.. 73
Coverage ratio	percent.. 96		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511130, BOOK PUBLISHERS												
All establishments	1	2 684	510	89 898	3 642 824	22 695	41 365	676 855	16 626 883	6 410 352	22 648 251	462 365
Establishments with 1 to 4 employees	8	1 497	—	2 693	70 756	1 919	2 844	42 206	303 214	142 544	444 511	7 259
Establishments with 5 to 9 employees	4	394	—	2 594	83 245	1 029	1 898	42 153	339 544	158 785	493 818	5 977
Establishments with 10 to 19 employees	3	283	—	3 793	123 715	1 614	2 891	54 756	439 351	218 195	650 257	8 959
Establishments with 20 to 49 employees	3	236	236	7 208	248 516	2 984	5 289	103 738	923 776	430 694	1 350 584	24 380
Establishments with 50 to 99 employees	1	125	125	8 501	323 575	3 084	5 524	96 833	1 275 808	571 865	1 833 724	32 314
Establishments with 100 to 249 employees	—	88	88	13 323	526 728	1 856	3 414	57 815	2 436 331	821 922	3 213 512	48 442
Establishments with 250 to 499 employees	—	25	25	9 114	353 368	2 352	4 518	68 844	1 440 014	722 745	2 119 321	50 774
Establishments with 500 to 999 employees	1	18	18	11 557	508 494	1 680	3 152	46 801	2 789 288	910 908	3 667 372	74 728
Establishments with 1,000 to 2,499 employees	—	16	16	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	2	2	D	D	D	D	D	D	D	D	D
Administrative records ²	9	1 326	—	3 269	76 733	1 783	2 813	49 632	318 551	149 287	467 858	8 707

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511130	Book publishers	2 684	89 898	3 642 824	22 695	41 365	676 855	16 626 883	6 410 352	22 648 251	462 365
5111301	Textbook publishing, including teachers' editions, hardbound and paperbound	156	20 411	927 335	1 991	3 880	63 710	4 953 100	1 477 800	6 190 179	81 461
5111303	Technical, scientific, and professional book publishing, hardbound and paperbound	182	14 110	555 632	4 297	8 125	125 536	2 215 189	601 322	2 820 410	75 972
5111305	Religious book publishing, hardbound and paperbound	80	4 605	144 075	1 316	2 520	42 327	491 107	318 474	795 830	24 202
5111307	Mass market, rack-size, paperbound book publishing	10	280	11 231	109	175	4 885	154 833	65 754	218 855	2 894
5111309	Book club book publishing, hardbound and paperbound	6	D	D	D	D	D	D	D	D	D
511130A	Mail order book publishing, hardbound and paperbound	34	3 619	199 205	1 235	1 713	24 905	1 217 865	528 176	1 750 481	12 127
511130C	Adult trade and juvenile book publishing, hardbound and paperbound	220	14 488	666 154	2 867	5 089	94 415	3 402 395	1 793 910	5 112 356	74 273
511130E	General reference book publishing, hardbound and paperbound	20	727	27 391	345	701	13 903	65 110	67 201	127 743	1 330
511130G	Other book publishing, excluding pamphlets and music books, nec, hardbound and paperbound	96	3 845	133 019	1 530	2 805	46 534	412 802	176 097	581 690	16 261
511130J	Pamphlet publishing (5 through 48 pages), except music or travel pamphlets, including religious and text	18	1 256	40 861	440	874	9 948	128 008	62 209	184 855	4 935
511130L	Audio book publishing (books recorded on audio cassettes or compact discs)	3	95	3 273	6	10	217	9 782	9 787	19 907	D
511130N	Books published in electronic format (CD-ROM, diskette, etc.)	29	10 592	505 769	1 613	3 138	41 346	1 494 111	178 311	1 688 432	90 868

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511130	Books	N	X	X	20 858 877	N	X	X	N
5111301	Textbook publishing, including teachers' editions, hardbound and paperbound	N	X	X	5 666 636	N	X	X	N
51113011	Hardbound elementary school (grades K through 8) textbook publishing, including teachers' editions	N	X	X	722 448	N	X	X	N
5111301111	Hardbound elementary school (grades K through 8) textbook publishing, including teachers' editions	27	X	X	722 448	29	X	X	656 772
51113012	Paperbound elementary school (grades K through 8) textbook publishing, including teachers' editions	N	X	X	284 748	N	X	X	N
5111301216	Paperbound elementary school (grades K through 8) textbook publishing, including teachers' editions	31	X	X	284 748	27	X	X	206 524
51113013	Hardbound high school (grades 9 through 12) textbook publishing, including teachers' editions	N	X	X	575 301	N	X	X	N
5111301321	Hardbound high school (grades 9 through 12) textbook publishing, including teachers' editions	27	X	X	575 301	18	X	X	428 759
51113014	Paperbound high school (grades 9 through 12) textbook publishing, including teachers' editions	N	X	X	289 930	N	X	X	N
5111301426	Paperbound high school (grades 9 through 12) textbook publishing, including teachers' editions	28	X	X	289 930	25	X	X	177 967
51113015	Hardbound college (grades 13 and up, for post high school level courses) textbook publishing	N	X	X	1 742 649	N	X	X	N
5111301531	Hardbound college (grades 13 and up, for post high school level courses) textbook publishing	54	X	X	1 742 649	47	X	X	1 129 079
51113016	Paperbound college (grades 13 and up, for post high school level courses) textbook publishing	N	X	X	729 705	N	X	X	N
5111301636	Paperbound college (grades 13 and up, for post high school level courses) textbook publishing	62	X	X	729 705	56	X	X	382 989
51113017	Paperbound elementary school (grades K through 8) workbook, textbook-related objective test, manual, etc., publishing	N	X	X	480 229	N	X	X	N
5111301741	Paperbound elementary school (grades K through 8) workbook, textbook-related objective test, manual, etc., publishing	31	X	X	480 229	38	X	X	279 460
51113018	Paperbound high school (grades 9 through 12) workbook, textbook-related objective test, manual, etc., publishing	N	X	X	105 172	N	X	X	N
5111301846	Paperbound high school (grades 9 through 12) workbook, textbook-related objective test, manual, etc., publishing	22	X	X	105 172	19	X	X	84 058
51113019	Paperbound college (grades 13 and up, for post high school level courses) workbook, textbook-related objective test, manual, etc., publishing	N	X	X	130 528	N	X	X	N
5111301951	Paperbound college (grades 13 and up, for post high school level courses) workbook, textbook-related objective test, manual, etc., publishing	20	X	X	130 528	23	X	X	141 634
5111301A	Standardized test publishing, including both tests and answer sheets, paperbound	N	X	X	356 281	N	X	X	N
5111301A56	Standardized test publishing, including both tests and answer sheets, paperbound	14	X	X	356 281	17	X	X	210 982
5111301Y	Textbooks, including teachers' editions, hardbound and paperbound, nsk	N	X	X	249 645	N	X	X	N
5111301YVW	Textbooks, including teachers' editions, hardbound and paperbound, nsk	N	X	X	249 645	N	X	X	N
5111303	Technical, scientific, and professional book publishing, hardbound and paperbound	N	X	X	3 144 951	N	X	X	N
51113031	Hardbound law book publishing, including supplements (designed for the profession)	N	X	X	548 378	N	X	X	N
5111303111	Hardbound law book publishing, including supplements (designed for the profession)	30	X	X	548 378	36	X	X	837 481
51113032	Paperbound law book publishing, including supplements (designed for the profession)	N	X	X	554 626	N	X	X	N
5111303216	Paperbound law book publishing, including supplements (designed for the profession)	30	X	X	554 626	25	X	X	269 938

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511130	Books—Con.								
5111303	Technical, scientific, and professional book publishing, hardbound and paperbound—Con.								
51113033	Hardbound medical book publishing, including dental subjects (designed for the profession)	N	X	X	693 803	N	X	X	N
5111303321	Hardbound medical book publishing, including dental subjects (designed for the profession)	34	X	X	693 803	34	X	X	373 265
51113034	Paperbound medical book publishing, including dental subjects (designed for the profession)	N	X	X	88 729	N	X	X	N
5111303426	Paperbound medical book publishing, including dental subjects (designed for the profession)	39	X	X	88 729	21	X	X	89 194
51113035	Hardbound business book publishing (nonfiction for readers in the profession)	N	X	X	129 517	N	X	X	N
5111303531	Hardbound business book publishing (nonfiction for readers in the profession)	30	X	X	129 517	26	X	X	100 196
51113036	Paperbound business book publishing (nonfiction for readers in the profession)	N	X	X	431 430	N	X	X	N
5111303636	Paperbound business book publishing (nonfiction for readers in the profession)	39	X	X	431 430	30	X	X	179 126
51113037	Other hardbound technical, scientific, and professional book publishing	N	X	X	474 149	N	X	X	N
5111303791	Other hardbound technical, scientific, and professional book publishing	56	X	X	474 149	68	X	X	327 050
51113038	Other paperbound technical, scientific, and professional book publishing	N	X	X	186 730	N	X	X	N
5111303896	Other paperbound technical, scientific, and professional book publishing	66	X	X	186 730	71	X	X	184 653
5111303Y	Technical, scientific, and professional book publishing, hardbound and paperbound, nsk	N	X	X	37 589	N	X	X	N
5111303YWV	Technical, scientific, and professional book publishing, hardbound and paperbound, nsk	N	X	X	37 589	N	X	X	N
5111305	Religious book publishing, hardbound and paperbound	N	X	X	754 682	N	X	X	N
51113051	Religious book publishing, hardbound and paperbound	N	X	X	753 968	N	X	X	N
5111305111	Bible, testament, hymnal, and devotional publishing, including prayer books and missals, hardbound and paperbound	40	X	X	306 664	N	X	X	N
5111305126	Other hardbound religious book publishing, including subscription reference books	48	X	X	227 953	36	X	X	139 911
5111305191	Other paperbound religious book publishing, including subscription reference books	65	X	X	219 351	56	X	X	122 380
5111305Y	Religious book publishing, hardbound and paperbound, nsk	N	X	X	714	N	X	X	N
5111305YWV	Religious book publishing, hardbound and paperbound, nsk	N	X	X	714	N	X	X	N
5111307	Mass market, rack-size, paperbound book publishing	N	X	X	878 436	N	X	X	927 543
51113071	Mass market, rack-size, paperbound book publishing	N	X	X	878 436	N	X	X	N
5111307100	Mass market, rack-size, paperbound book publishing	23	X	X	878 436	20	X	X	927 543
5111309	Book club book publishing, hardbound and paperbound	N	X	X	1 179 841	N	X	X	N
51113091	Book club book publishing, hardbound and paperbound	N	X	X	1 179 841	N	X	X	N
5111309100	Book club book publishing, hardbound and paperbound	23	X	X	1 179 841	N	X	X	N
511130A	Mail order book publishing, hardbound and paperbound	N	X	X	802 372	N	X	X	N
511130A1	Mail order book publishing, hardbound and paperbound	N	X	X	802 372	N	X	X	N
511130A100	Mail order book publishing, hardbound and paperbound	65	X	X	802 372	N	X	X	N

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511130	Books—Con.								
511130C	Adult trade and juvenile book publishing, hardbound and paperbound	N	X	X	4 253 271	N	X	X	N
511130C1	Hardbound adult trade book publishing, whether by trade or mass market publishers	N	X	X	2 254 632	N	X	X	N
511130C111	Hardbound adult trade book publishing, whether by trade or mass market publishers	139	X	X	2 254 632	97	X	X	1 204 438
511130C2	Paperbound (excluding mass market rack-size) adult trade book publishing, whether by trade or mass market publishers	N	X	X	1 175 443	N	X	X	N
511130C216	Paperbound (excluding mass market rack-size) adult trade book publishing, whether by trade or mass market publishers	155	X	X	1 175 443	103	X	X	531 641
511130C3	Hardbound juvenile book publishing (fiction and nonfiction, excluding toy and coloring books)	N	X	X	547 803	N	X	X	N
511130C321	Hardbound juvenile book publishing (fiction and nonfiction, excluding toy and coloring books)	47	X	X	547 803	39	X	X	369 673
511130C4	Paperbound juvenile book publishing (fiction and nonfiction, excluding toy and coloring books)	N	X	X	250 001	N	X	X	N
511130C426	Paperbound juvenile book publishing (fiction and nonfiction, excluding toy and coloring books)	47	X	X	250 001	27	X	X	108 623
511130CY	Adult trade and juvenile book publishing, hardbound and paperbound, nsk	N	X	X	25 392	N	X	X	N
511130CYWV	Adult trade and juvenile book publishing, hardbound and paperbound, nsk	N	X	X	25 392	N	X	X	N
511130E	General reference book publishing, hardbound and paperbound	N	X	X	345 793	N	X	X	N
511130E1	General reference book publishing, hardbound and paperbound	N	X	X	338 214	N	X	X	N
511130E111	Encyclopedia publishing, hardbound and paperbound	14	X	X	70 215	10	X	X	162 275
511130E116	Dictionary and thesaurus publishing, hardbound and paperbound	11	X	X	60 907	10	X	X	56 889
511130E121	Other general reference book publishing, hardbound and paperbound	24	X	X	207 092	33	X	X	239 204
511130EY	General reference book publishing, hardbound and paperbound, nsk	N	X	X	7 579	N	X	X	N
511130EYWV	General reference book publishing, hardbound and paperbound, nsk	N	X	X	7 579	N	X	X	N
511130G	Other book publishing, excluding pamphlets and music books, nec, hardbound and paperbound	N	X	X	508 069	N	X	X	N
511130G1	Other book publishing, excluding pamphlets and music books, hardbound and paperbound	N	X	X	506 158	N	X	X	N
511130G111	Hardbound university press book publishing	47	X	X	104 698	55	X	X	106 960
511130G121	Paperbound university press book publishing, excluding pamphlets	42	X	X	102 023	45	X	X	78 325
511130G191	Other book publishing, nec, excluding pamphlets and music books, hardbound and paperbound	59	X	X	299 437	N	X	X	N
511130GY	Other book publishing, nec, excluding pamphlets and music books, hardbound and paperbound, nsk	N	X	X	1 911	N	X	X	N
511130GYWV	Other book publishing, nec, excluding pamphlets and music books, hardbound and paperbound, nsk	N	X	X	1 911	N	X	X	N
511130J	Pamphlet publishing (5 through 48 pages), except music or travel pamphlets, including religious and text	N	X	X	122 018	N	X	X	N
511130J1	Pamphlet publishing (5 through 48 pages) except music or travel pamphlets, including religious and text	N	X	X	122 018	N	X	X	N
511130J100	Pamphlet publishing (5 through 48 pages), except music or travel pamphlets, including religious and text	32	X	X	122 018	N	X	X	N
511130L	Audio book publishing (books recorded on audio cassettes or compact discs)	N	X	X	86 657	N	X	X	37 020
511130L1	Audio book publishing (books recorded on audio cassettes or compact discs)	N	X	X	86 657	N	X	X	N
511130L100	Audio book publishing (books recorded on audio cassettes or compact discs)	15	X	X	86 657	16	X	X	37 020

See footnotes at end of table.

Table 6a. Products Statistics: 1997 and 1992—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511130	Books—Con.								
511130N	Books published in electronic format (CD-ROM, diskette, etc.)	N	X	X	1 184 568	N	X	X	N
511130N1	Books published in electronic format (CD-ROM, diskette, etc.)	N	X	X	1 184 568	N	X	X	N
511130N111	Elementary school textbooks (grades K through 8), published in electronic format (CD-ROM, diskette, etc.)	6	X	X	11 185	N	X	X	N
511130N116	High school textbooks (grades 9 through 12), published in electronic format (CD-ROM, diskette, etc.)	4	X	X	3 055	N	X	X	N
511130N121	College textbooks (grades 13 and up, for post high school level courses), published in electronic format (CD-ROM, diskette, etc.)	7	X	X	6 603	N	X	X	N
511130N126	Law books, including supplements (designed for the profession), published in electronic format (CD-ROM, diskette, etc.)	11	X	X	D	N	X	X	N
511130N131	Medical books, including dental subjects (designed for the profession), published in electronic format (CD-ROM, diskette, etc.)	12	X	X	27 448	N	X	X	N
511130N136	Business books (nonfiction for readers in the profession), published in electronic format (CD-ROM, diskette, etc.)	10	X	X	18 191	N	X	X	N
511130N141	Other technical, scientific, and professional books, published in electronic format (CD-ROM, diskettes, etc.)	20	X	X	150 911	N	X	X	N
511130N146	Religious books, published in electronic format (CD-ROM, diskette, etc.)	8	X	X	1 946	N	X	X	N
511130N151	General books (trade, etc.), published in electronic format (CD-ROM, diskette, etc.)	10	X	X	26 233	N	X	X	N
511130N156	General reference books, published in electronic format (CD-ROM, diskette, etc.)	13	X	X	D	N	X	X	N
511130N191	Other book publishing, excluding pamphlets, published in electronic format (CD-ROM, diskette, etc.)	13	X	X	76 611	N	X	X	N
511130NY	Books published in electronic format (CD-ROM, diskette, etc.), nsk	N	X	X	—	N	X	X	N
511130NYWV	Books published in electronic format (CD-ROM, diskette, etc.), nsk	N	X	X	—	N	X	X	N
511130W	Book publishers, nsk, total	N	X	X	1 931 583	N	X	X	N
511130WY	Book publishers, nsk, total	N	X	X	1 931 583	N	X	X	N
511130WYWW	Book publishers, nsk, for nonadministrative-record establishments	N	X	X	1 463 313	N	X	X	N
511130WYWY	Book publishers, nsk, for administrative-record establishments	N	X	X	468 270	N	X	X	N

Additional information is available for this item: see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; a 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111301	TEXTBOOK PUBLISHING, INCLUDING TEACHERS' EDITIONS, HARDBOUND AND PAPERBOUND		
	United States	5 666 636	N
	Arizona	2 455	N
	Arkansas	4 891	N
	California	413 286	N
	Colorado	9 187	N
	Connecticut	13 446	N

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111301	TEXTBOOK PUBLISHING, INCLUDING TEACHERS' EDITIONS, HARDBOUND AND PAPERBOUND—Con.		
	Illinois	995 809	N
	Massachusetts	727 325	N
	Michigan	21 932	N
	Minnesota	86 108	N
	New York	1 305 225	N
	Tennessee	3 180	N
	Virginia	4 155	N
5111303	TECHNICAL, SCIENTIFIC, AND PROFESSIONAL BOOK PUBLISHING, HARDBOUND AND PAPERBOUND		
	United States	3 144 951	N
	California	281 108	N
	Connecticut	57 780	N
	District of Columb	16 597	N
	Florida	43 109	N
	Georgia	9 629	N
	Illinois	23 717	N
	Maryland	115 156	N
	Massachusetts	63 521	N
	New Jersey	146 724	N
	New York	585 548	N
	Ohio	44 820	N
	Oklahoma	6 885	N
	Oregon	7 255	N
	Pennsylvania	267 167	N
	Texas	81 633	N
	Washington	5 502	N
	Wisconsin	23 282	N
5111305	RELIGIOUS BOOK PUBLISHING, HARDBOUND AND PAPERBOUND		
	United States	754 682	N
	California	30 367	N
	Illinois	60 106	N
	Indiana	14 968	N
	Massachusetts	6 020	N
	Missouri	17 797	N
	New Jersey	53 549	N
	New York	23 135	N
	North Carolina	9 325	N
	Ohio	3 754	N
	Oregon	53 274	N
	Pennsylvania	8 061	N
	Texas	4 600	N
5111307	MASS MARKET, RACK-SIZE, PAPERBOUND BOOK PUBLISHING		
	United States	878 436	927 543
	New York	736 447	902 658
5111309	BOOK CLUB BOOK PUBLISHING, HARDBOUND AND PAPERBOUND		
	United States	1 179 841	N
511130A	MAIL ORDER BOOK PUBLISHING, HARDBOUND AND PAPERBOUND		
	United States	802 372	N
	California	22 724	N
	Illinois	6 579	N
	New York	234 544	N
511130C	ADULT TRADE AND JUVENILE BOOK PUBLISHING, HARDBOUND AND PAPERBOUND		
	United States	4 253 271	N
	Arizona	4 929	N
	California	322 368	N
	Colorado	9 895	N
	Connecticut	82 563	N
	Illinois	144 917	N
	Iowa	22 085	N
	Maryland	6 101	N
	Massachusetts	277 180	N
	Minnesota	41 850	N
	New Jersey	102 699	N
	New Mexico	4 718	N
	New York	2 600 947	N
	North Carolina	37 329	N
	Ohio	78 919	N
	Oregon	15 118	N
	Pennsylvania	60 050	N
	Texas	11 925	N
	Vermont	8 026	N
	Virginia	12 573	N
	Wisconsin	68 817	N

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
511130E	GENERAL REFERENCE BOOK PUBLISHING, HARDBOUND AND PAPERBOUND		
	United States	345 793	N
	Illinois	55 019	N
	New York	34 564	N
	Ohio	11 019	N
	Texas	10 879	N
511130G	OTHER BOOK PUBLISHING, EXCLUDING PAMPHLETS AND MUSIC BOOKS, NEC, HARDBOUND AND PAPERBOUND		
	United States	508 069	N
	Arizona	2 970	N
	California	21 408	N
	Florida	3 790	N
	Illinois	23 252	N
	Massachusetts	20 877	N
	Michigan	24 393	N
	New Jersey	26 975	N
	New York	83 345	N
	Pennsylvania	6 204	N
	Texas	108 631	N
	Wisconsin	3 085	N
511130J	PAMPHLET PUBLISHING (5 THROUGH 48 PAGES), EXCEPT MUSIC OR TRAVEL PAMPHLETS, INCLUDING RELIGIOUS AND TEXT		
	United States	122 018	N
	California	49 345	N
	Michigan	2 213	N
	Pennsylvania	3 380	N
511130L	AUDIO BOOK PUBLISHING (BOOKS RECORDED ON AUDIO CASSETTES OR COMPACT DISCS)		
	United States	86 657	37 020
	California	10 536	N
	New York	73 111	N
511130N	BOOKS PUBLISHED IN ELECTRONIC FORMAT (CD-ROM, DISKETTE, ETC.)		
	United States	1 184 568	N
	California	54 950	N
	Connecticut	2 993	N
	District of Columb	3 971	N
	Illinois	13 940	N
	Maryland	8 873	N
	New Jersey	28 226	N
	New York	289 673	N
	Pennsylvania	24 689	N
	Texas	23 682	N
Virginia	13 284	N	

Additional information is available for this item; see Appendix F.
 @ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.
 \$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
511130	BOOK PUBLISHERS				
32212203	Newsprint	X	D	X	N
32200015	Coated paper	X	D	X	N
32212019	Uncoated paper	X	177 509	X	N
32591003	Printing ink	X	59 772	X	N
00970099	All other materials and components, parts, containers, and supplies	X	412 297	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	841 127	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

511130 BOOK PUBLISHERS

This U.S. industry comprises establishments known as book publishers. Establishments in this industry carry out design, editing, and marketing activities necessary for producing and distributing books. These establishments may publish books in print, electronic, or audio form.

The data published with NAICS code 511130 include the following SIC industry:

2731 Book publishing (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111101	27111	27111	511120A	2721C	2721C	511130N pt	2731J pt	27311 pt
5111101111	2711101	2711101	511120A111	2721C10	2721C10	511130N pt	2731J pt	27313 pt
5111101216	2711111	2711111	511120A216	2721C20	2721C20	511130N pt	2731J pt	27314 pt
5111101321	2711122	2711122	511120A321	2721C50	2721C50	511130N pt	2731J pt	2731B pt
5111101426	2711132	2711132	511120A326	2721C60	2721C60	511130N pt	2731J pt	2731C pt
5111101531	2711142	2711142	511120A331	2721C70	2721C70	511130N pt	2731J pt	2731D pt
5111101636	2711152	2711152	511120A436	2721C80	2721C80	511130N pt	2731J pt	2731E pt
5111101YVW	2711100	2711100	511120A541	2721C90	2721C90	511130N pt	2731J pt	2731F pt
			511120AYVW	2721C00	2721C00	511130N11	2731J22	2731100 pt
5111103	27112	27112	511120C	2721D	2721D	511130N16	2731J24	2731100 pt
5111103111	2711201	2711201	511120C111	2721D10	2721D10	511130N121	2731J26	2731100 pt
5111103216	2711211	2711211	511120C116	2721D15	2721D15	511130N126	2731J28	2731300 pt
5111103321	2711222	2711222	511120C121	2721D24	2721D24	511130N131	2731J32	2731300 pt
5111103426	2711232	2711232	511120C121	2721D24	2721D24	511130N136	2731J34	2731300 pt
5111103531	2711242	2711242	511120C191	2721D31	2721D31	511130N141	2731J36	2731300 pt
5111103636	2711252	2711252	511120C193	2721D33	2721D33	511130N146	2731J38	2731400 pt
5111103YVW	2711200	2711200	511120C196	2721D35	2721D35	511130N151 pt	2731J42 pt	2731B00 pt
			511120CYVW	2721D00	2721D00	511130N151 pt	2731J42 pt	2731C00 pt
5111105	27113	27113	511120W	27210	27210	511130N151 pt	2731J42 pt	2731D00 pt
5111105111	2711362	2711362	511120WYVW	2721000	2721000	511130N156	2731J44	2731E00 pt
5111105116	2711398	2711398	511120WYVW	2721002	2721002	511130N161	2731J46	2731F00 pt
5111105YVW	2711300	2711300				511130NYVW pt	2731J00 pt	2731100 pt
						511130NYVW pt	2731J00 pt	2731300 pt
5111107	27114	27114	5111301	27311	27311 pt	511130NYVW pt	2731J00 pt	2731400 pt
5111107111	2711462	2711462	5111301111	2731111	2731111	511130NYVW pt	2731J00 pt	2731B00 pt
5111107116	2711498	2711498	5111301216	2731112	2731112	511130NYVW pt	2731J00 pt	2731E00 pt
5111107YVW	2711400	2711400	5111301321	2731113	2731113	511130NYVW pt	2731J00 pt	2731F00 pt
			5111301426	2731114	2731114	511130NYVW pt	2731J00 pt	2731100 pt
511110W	27110	27110	5111301531	2731115	2731115	511130NYVW pt	2731J00 pt	2731300 pt
511110WYVW	2711000	2711000	5111301636	2731116	2731116	511130NYVW pt	2731J00 pt	2731400 pt
511110WYVW	2711002	2711002	5111301741	2731121	2731121	511130NYVW pt	2731J00 pt	2731B00 pt
			5111301846	2731123	2731123	511130NYVW pt	2731J00 pt	2731C00 pt
5111201	27211	27211	5111301951	2731125	2731125	511130NYVW pt	2731J00 pt	2731D00 pt
5111201111	2721112	2721112	5111301A56	2731131	2731131	511130NYVW pt	2731J00 pt	2731E00 pt
5111201116	2721114	2721114	5111301YVW	2731100	2731100 pt	511130NYVW pt	2731J00 pt	2731F00 pt
5111201YVW	2721100	2721100				511130W	27310	2731000 pt
						511130WYVW	2731000 pt	2731000 pt
5111203	27213	27213	5111303	27313	27313 pt	511130WYVW	2731002 pt	2731002 pt
5111203111	2721324	2721324	5111303111	2731315	2731315			
5111203116	2721325	2721325	5111303216	2731317	2731317	5111401	27416	27416
5111203121	2721327	2721327	5111303321	2731325	2731325	5111401111	2741612	2741600 pt
5111203126	2721328	2721328	5111303426	2731327	2731327	5111401116	2741614	2741600 pt
5111203131	2721330	2721330	5111303531	2731335	2731335	5111401YVW	2741600	2741600 pt
5111203136	2721332	2721332	5111303636	2731337	2731337			
5111203141	2721334	2721334	5111303791	2731345	2731345	5111403	27417	27417
5111203146	2721335	2721335	5111303896	2731347	2731347	5111403111	2741713	2741713
5111203151	2721337	2721337	51113039YVW	2731300	2731300 pt	5111403116	2741716	2741716
5111203156	2721338	2721338				5111403YVW	2741700	2741700
5111203161	2721340	2721340	5111305	27314	27314 pt	5111405	27418	27418 pt
5111203166	2721342	2721342	5111305111 pt	2731412 pt	2731411	5111405100 pt	2741800 pt	2741800 pt
5111203171	2721344	2721344	5111305111 pt	2731412 pt	2731413	5111405100 pt	2741814	2741815
5111203176	2721346	2721346	5111305111 pt	2731412 pt	2731423			
5111203YVW	2721300	2721300	5111305126	2731426	2731426	5111409 pt	2741B	2741B pt
			5111305191	2731428	2731428	5111409121	73311	73310 pt
5111205	27214	27214	5111305YVW	2731400	2731400 pt	5111409191	7331100 pt	7331000 pt
5111205111	2721424	2721424				5111409YVW pt	7331100 pt	7331000 pt
5111205116	2721425	2721425	5111307	2731A	2731A	5111409YVW pt	7331100 pt	7331000 pt
5111205121	2721427	2721427	5111307100	2731A00	2731A00			
5111205126	2721428	2721428				5111409 pt	2741B	2741B pt
5111205131	2721430	2721430	5111309	2731B	2731B pt	5111409121	7331100 pt	7331000 pt
5111205136	2721432	2721432	5111309100 pt	2731B00	2731B00 pt	5111409191	7331100 pt	7331000 pt
5111205141	2721434	2721434	5111309100 pt	2731B16 pt	2731B15	5111409YVW pt	7331100 pt	7331000 pt
5111205146	2721435	2721435	5111309100 pt	2731B16 pt	2731B17	5111409YVW pt	7331100 pt	7331000 pt
5111205151	2721437	2721437						
5111205156	2721438	2721438	511130A	2731C	2731C pt	511140W pt	27410	27410 pt
			511130A100 pt	2731C00	2731C00 pt	511140WYVW pt	2741000 pt	2741000 pt
5111205161	2721440	2721440	511130A100 pt	2731C74 pt	2731C73	511140WYVW pt	2741002 pt	2741002 pt
5111205166	2721442	2721442	511130A100 pt	2731C74 pt	2731C75	511140WYVW pt	2741002 pt	2741002 pt
5111205171	2721444	2721444						
5111205176	2721446	2721446	511130C	2731D	2731D pt	511140Y pt	27710	27710 pt
5111205YVW	2721400	2721400	511130C111	2731D41	2731D41	5111910 pt	27710	27710 pt
			511130C216	2731D47	2731D47	5111910111	2771113	2771113
5111207	2721A	2721A	511130C321	2731D51	2731D51	5111910216	2771115	2771115
5111207111	2721A20	2721A20	511130C426	2731D53	2731D53	5111910321	2771123 pt	2771122
5111207226	2721A60	2721A60	511130CYVW	2731D00	2731D00 pt	5111910426	2771126	2771126
5111207231	2721A70	2721A70				5111910531	2771127	2771127
5111207336	2721A80	2721A80	511130E	2731E	2731E pt	5111910536	2771129	2771129
5111207441	2721A90	2721A90	511130E111	2731E21	2731E21	5111910641 pt	2771134 pt	2771133
5111207YVW	2721A00	2721A00	511130E121	2731E41	2731E41	5111910641 pt	2771134 pt	2771135
			511130E121	2731E57	2731E57	5111910YVW pt	2771000 pt	2771000 pt
5111209	2721B	2721B	511130EYVW	2731E00	2731E00 pt	5111910YVW pt	2771100	2771100
5111209111	2721B10	2721B10				5111910YVW pt	2771002 pt	2771002 pt
5111209216	2721B20	2721B20	511130G	2731F	2731F pt	5111991	27419	27419
5111209321	2721B50	2721B50	511130G111	2731F13	2731F13	5111991100	2741900	2741900
5111209326	2721B60	2721B60	511130G121	2731F15	2731F15			
5111209331	2721B70	2721B70	511130G191 pt	2731F18 pt	2731F17	5111993	2741A	2741A
5111209436	2721B80	2721B80	511130G191 pt	2731F18 pt	2731F19	5111993100	2741A00	2741A00
5111209541	2721B90	2721B90	511130GYVW	2731F00 pt	2731F00 pt			
5111209YVW	2721B00	2721B00				5111995 pt	27418	27418 pt
			511130J	2731G	2731G pt			
			511130J100 pt	2731G00 pt	2731G00 pt			
			511130J100 pt	2731G59	2731G59			
			511130L	2731H	2731H			
			511130L100	2731H00	2731H00			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111995 pt.....	2741B pt.....	2741B pt	5111995346	2741B23	2741B23	5111995YWV pt....	2741800 pt	2741800 pt
5111995316	2741B13	2741B13	5111995352	2741B25	2741B25	5111995YWV pt....	2741B00 pt.....	2741B00 pt
5111995326	2741B15	2741B15	5111995356	2741B27	2741B27			
5111995331	2741B17	2741B17	5111995361	2741B29	2741B29	511199W	27410 pt	27410 pt
5111995336	2741B18	2741B18	5111995366	2741812	2741813	511199WYWW	2741000 pt	2741000 pt
5111995341	2741B20	2741B20	5111995391	2741B71	2741B71	511199WYWY	2741002 pt	2741002 pt

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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

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Issued November 1999

EC97M-5111D

1997 Economic Census

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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Compan-ies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511140	Database & directory publishers	1 322	1 458	43 115	1 654 926	13 789	25 874	588 539	9 892 286	2 340 028	12 258 101	167 011
274110	Miscellaneous publishing (pt) ..	N	828	32 980	1 337 421	10 476	19 648	448 485	8 853 705	1 876 892	10 754 154	137 659
733105	Direct mail advertising services (pt) ..	N	630	10 135	317 505	3 313	6 226	140 054	1 038 581	463 136	1 503 947	29 352

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments		All employees		Production workers			Value added by manufac-ture (\$1,000)	Cost of materials (\$1,000)	Value of ship-ments (\$1,000)	Total capital ex-pen-di-tures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
511140, DATABASE & DIRECTORY PUBLISHERS												
United States	1	1 458	307	43 115	1 654 926	13 789	25 874	588 539	9 892 286	2 340 028	12 258 101	167 011
California	1	173	37	3 553	142 394	1 247	2 281	45 457	1 307 410	221 172	1 556 902	12 215
Colorado	1	48	8	1 623	73 491	742	1 426	28 098	398 481	92 180	490 694	10 069
Connecticut	1	37	7	752	26 252	260	449	12 505	121 737	40 486	162 560	1 771
Florida	3	96	16	1 392	44 004	560	1 013	20 874	143 973	47 084	190 705	3 571
Georgia	2	39	9	556	15 782	287	542	8 379	53 622	23 435	77 558	969
Illinois	1	80	16	1 842	79 959	454	858	13 262	633 089	108 502	741 436	8 005
Indiana	-	18	4	448	16 709	270	549	7 974	32 676	6 506	38 511	1 931
Iowa	4	19	8	1 481	40 211	414	726	11 151	112 966	40 791	149 671	6 293
Louisiana	5	9	2	140	3 717	42	69	803	6 798	2 655	9 453	178
Maryland	-	38	8	1 112	51 099	532	1 047	23 313	146 315	48 066	193 800	5 435
Nebraska	-	12	6	2 727	78 422	610	1 408	46 519	290 091	103 836	393 935	13 022
New Jersey	2	71	18	3 175	135 512	930	1 592	39 397	463 379	122 270	585 590	10 099
New York	2	140	36	3 712	162 339	1 139	2 257	35 545	680 736	230 818	909 791	10 774
Ohio	-	51	11	4 717	179 223	687	1 292	101 029	559 656	165 640	726 779	17 635
Pennsylvania	1	73	15	1 723	66 510	975	1 909	35 603	193 790	54 697	248 992	6 388
Tennessee	7	16	4	416	13 829	138	213	4 760	30 113	9 831	39 884	1 059
Texas	3	104	22	1 679	62 342	579	1 156	16 248	174 504	56 004	230 827	3 419
Utah	-	13	4	575	11 065	240	475	5 521	56 320	13 574	69 894	2 108
Washington	-	33	6	457	13 579	197	385	4 854	222 432	42 059	264 453	1 297
Wisconsin	1	17	5	672	18 215	354	628	9 346	42 569	29 732	72 128	2 498

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
511140, DATABASE & DIRECTORY PUBLISHERS		511140, DATABASE & DIRECTORY PUBLISHERS	
— Con.		— Con.	
Companies ¹	number.. 1 322	Value added	\$1,000.. 9 892 286
All establishments	number.. 1 458	Total inventories, beginning of year	\$1,000.. 835 193
Establishments with 1 to 19 employees	number.. 1 151	Finished goods inventories, beginning of year	\$1,000.. 571 434
Establishments with 20 to 99 employees	number.. 214	Work-in-process inventories, beginning of year	\$1,000.. 151 432
Establishments with 100 employees or more	number.. 93	Materials and supplies inventories, beginning of year	\$1,000.. 112 327
All employees	number.. 43 115	Total inventories, end of year	\$1,000.. 802 676
Total compensation ²	\$1,000.. 1 995 238	Finished goods inventories, end of year	\$1,000.. 577 683
Annual payroll	\$1,000.. 1 654 926	Work-in-process inventories, end of year	\$1,000.. 119 396
Total fringe benefits	\$1,000.. 340 312	Materials and supplies inventories, end of year	\$1,000.. 105 597
Production workers, average for year	number.. 13 789	Gross book value of total assets at beginning of year	\$1,000.. 1 124 409
Production workers on March 12	number.. 13 682	Total capital expenditures (new and used)	\$1,000.. 167 011
Production workers on May 12	number.. 13 670	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 27 938
Production workers on August 12	number.. 13 886	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 139 073
Production workers on November 12	number.. 13 918	Total retirements ²	\$1,000.. 67 296
Production-worker hours	1,000.. 25 874	Gross book value of total assets at end of year	\$1,000.. 1 224 124
Production-worker wages	\$1,000.. 588 539	Total depreciation during year ²	\$1,000.. 109 585
Total cost of materials	\$1,000.. 2 340 028	Total rental payments ²	\$1,000.. 113 864
Cost of materials, parts, containers, etc., consumed	\$1,000.. 442 734	Buildings and other structures rental payments ²	\$1,000.. 79 436
Cost of resales	\$1,000.. 30 854	Machinery and equipment rental payments ²	\$1,000.. 34 428
Cost of fuels	\$1,000.. 4 149	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 8 896
Cost of purchased electricity	\$1,000.. 19 432	Response coverage ratio ⁴	percent.. 85
Cost of contract work	\$1,000.. 1 842 859	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 10 648
Quantity of electricity purchased for heat and power	1,000 kWh.. 242 142	Response coverage ratio ⁴	percent.. 85
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 28 492
Total value of shipments	\$1,000.. 12 258 101	Response coverage ratio ⁴	percent.. 85
Primary products value of shipments	\$1,000.. 11 919 144	Cost of purchased legal services ³	\$1,000.. 5 484
Secondary products value of shipments	\$1,000.. 205 032	Response coverage ratio ⁴	percent.. 85
Total miscellaneous receipts	\$1,000.. 133 925	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 4 038
Value of resales	\$1,000.. 35 897	Response coverage ratio ⁴	percent.. 85
Contract receipts	\$1,000.. —	Cost of purchased advertising services ³	\$1,000.. 79 460
Other miscellaneous receipts	\$1,000.. 98 028	Response coverage ratio ⁴	percent.. 85
Primary products specialization ratio	percent.. 98	Cost of purchased software and other data processing services ³	\$1,000.. 25 829
Value of primary products shipments made in all industries	\$1,000.. 12 196 563	Response coverage ratio ⁴	percent.. 85
Value of primary products shipments made in this industry	\$1,000.. 11 919 144	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 237
Value of primary products shipments made in other industries	\$1,000.. 277 419	Response coverage ratio ⁴	percent.. 85
Coverage ratio	percent.. 97		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511140, DATABASE & DIRECTORY PUBLISHERS												
All establishments	1	1 458	307	43 115	1 654 926	13 789	25 874	588 539	9 892 286	2 340 028	12 258 101	167 011
Establishments with 1 to 4 employees	6	682	—	1 374	44 345	877	1 463	24 718	156 527	62 200	218 868	4 098
Establishments with 5 to 9 employees	4	289	—	1 878	62 689	917	1 841	34 677	196 038	81 325	277 751	5 258
Establishments with 10 to 19 employees	2	180	—	2 432	81 741	1 236	2 244	40 166	254 264	101 547	357 662	6 690
Establishments with 20 to 49 employees	2	158	158	4 830	176 153	2 145	3 940	75 317	511 038	189 888	702 307	11 584
Establishments with 50 to 99 employees	1	56	56	3 791	143 853	1 621	3 036	61 311	705 298	209 876	916 528	11 963
Establishments with 100 to 249 employees	—	55	55	8 076	314 392	3 007	5 741	90 550	2 390 318	555 173	2 943 615	28 013
Establishments with 250 to 499 employees	1	23	23	7 779	297 053	2 449	4 519	97 241	1 352 156	248 336	1 601 772	32 676
Establishments with 500 to 999 employees	1	13	13	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	1	1	D	D	D	D	D	D	D	D	D
Administrative records ²	9	610	—	1 777	42 806	904	1 536	26 904	148 327	60 264	208 583	4 612

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511140	Database & directory publishers	1 458	43 115	1 654 926	13 789	25 874	588 539	9 892 286	2 340 028	12 258 101	167 011
5111401	Telephone directory publishing	215	13 118	551 622	4 964	9 173	167 961	6 355 988	1 165 129	7 546 854	66 113
5111403	Catalog and directory (except telephone directory) publishing	137	6 338	252 245	1 919	3 692	51 726	775 689	265 891	1 039 707	21 551
5111405	Business service publication publishing, including tax, credit regulations, indexes, etc., excluding directories and newsletters	122	8 700	356 507	1 474	2 760	145 785	1 181 649	293 880	1 474 663	30 218
5111409	Other database publishing, nec	222	10 672	362 825	3 535	6 760	153 700	1 153 061	431 425	1 585 643	38 183

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511140	Database and directory publishers	N	X	X	12 196 563	N	X	X	N
5111401	Telephone directory publishing	N	X	X	7 486 941	N	X	X	4 827 038
51114011	Telephone directory publishing	N	X	X	7 392 811	N	X	X	N
5111401111	Telephone directories, published in printed format	189	X	X	7 295 104	N	X	X	N
5111401116	Telephone directories, published in electronic format	29	X	X	97 707	N	X	X	N
5111401Y	Telephone directory publishing, nsk	N	X	X	94 130	N	X	X	N
5111401YWV	Telephone directory publishing, nsk	N	X	X	94 130	N	X	X	N
5111403	Catalog and directory (except telephone directory) publishing	N	X	X	1 043 395	N	X	X	616 443
51114031	Catalog and directory (except telephone directory) publishing	N	X	X	1 013 745	N	X	X	N
5111403111	Directory (except telephone directory) publishing, including business reference services	112	X	X	722 777	145	X	X	494 642
5111403116	Catalog publishing	75	X	X	290 968	62	X	X	110 355
5111403Y	Catalog and directory (except telephone directories), publishing, nsk	N	X	X	29 650	N	X	X	N
5111403YWV	Catalog and directory (except telephone directories), publishing, nsk	N	X	X	29 650	N	X	X	11 446
5111405	Business service publication publishing, including tax, credit regulations, indexes, etc., excluding directories and newsletters	N	X	X	1 486 997	N	X	X	N
51114051	Business service publication publishing, including tax, credit regulations, indexes, etc., excluding directories and newsletters	N	X	X	1 486 997	N	X	X	N
5111405100	Business service publication publishing, including tax, credit regulations, indexes, etc., excluding directories and newsletters	118	X	X	1 486 997	N	X	X	N
5111409	Other database publishing, nec	N	X	X	1 586 365	N	X	X	N
51114091	Other database publishing	N	X	X	1 586 365	N	X	X	N
5111409121	Mailing lists, compiled-maintained for sale or rent	220	X	X	1 007 419	N	X	X	N
5111409191	Other database publishing	68	X	X	578 946	N	X	X	N
5111409Y	Other database publishing, nsk	N	X	X	—	N	X	X	N
5111409YWV	Other database publishing, nsk	N	X	X	—	N	X	X	N
511140W	Database and directory publishers, nsk, total	N	X	X	592 865	N	X	X	N
511140WY	Database and directory publishers, nsk, total	N	X	X	592 865	N	X	X	N
511140WYWV	Database and directory publishers, nsk, for nonadministrative-record establishments	N	X	X	387 564	N	X	X	N
511140WYWY	Database and directory publishers, nsk, for administrative-record establishments	N	X	X	205 301	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: ^P 10 to 19 percent estimated; ^Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111401	TELEPHONE DIRECTORY PUBLISHING		
	United States	7 486 941	4 827 038
	District of Columb	6 674	N
	Florida	59 568	18 919
	Georgia	20 373	N
	Mississippi	3 500	N
	New Jersey	3 987	8 470
	New York	94 587	86 088
	North Carolina	7 993	N
	Ohio	180 531	54 705
	South Carolina	6 924	4 797
	Texas	69 451	30 354
	Utah	24 249	N
5111403	CATALOG AND DIRECTORY (EXCEPT TELEPHONE DIRECTORY) PUBLISHING		
	United States	1 043 395	616 443
	California	87 717	67 563
	Colorado	11 805	3 706
	Connecticut	2 094	5 095
	Florida	16 842	9 862
	Illinois	57 489	22 992
	Kentucky	2 412	N
	Maryland	10 549	2 482
	Massachusetts	4 028	N
	Minnesota	7 780	N
	New Hampshire	2 378	N
	New York	269 281	256 063
	Ohio	17 261	20 957
	Pennsylvania	26 202	21 731
	Texas	64 256	22 408
	Virginia	13 087	7 002
5111405	BUSINESS SERVICE PUBLICATION PUBLISHING, INCLUDING TAX, CREDIT REGULATIONS, INDEXES, ETC., EXCLUDING DIRECTORIES AND NEWSLETTERS		
	United States	1 486 997	N
	California	77 397	N
	Connecticut	8 810	N
	Florida	25 883	N
	Iowa	5 298	N
	Massachusetts	38 807	N
	New Jersey	61 785	N
	New York	325 549	N
	Pennsylvania	20 665	N
	Texas	29 555	N
	Washington	3 274	N
5111409	OTHER DATABASE PUBLISHING, NEC		
	United States	1 586 365	N
	Arizona	3 926	N
	California	71 630	N
	Colorado	99 062	N
	Connecticut	135 169	N
	Florida	26 076	N
	Georgia	19 611	N
	Illinois	42 542	N
	Maryland	35 622	N
	Massachusetts	64 156	N
	Michigan	5 790	N
	Minnesota	7 029	N
	Missouri	15 980	N
	Nevada	2 281	N
	New Jersey	168 366	N
	New York	198 457	N
	Ohio	19 982	N
	Pennsylvania	139 383	N
	Texas	40 926	N
	Vermont	64 742	N
	Virginia	22 901	N
	Washington	5 929	N
	Wisconsin	7 600	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
511140	DATABASE & DIRECTORY PUBLISHERS				
32200015	Coated paper	X	—	X	N
32212019	Uncoated paper	X	—	X	N
32212203	Newsprint	X	—	X	N
32591003	Printing ink	X	—	X	N
00970099	All other materials and components, parts, containers, and supplies	X	242 332	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	200 429	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers’ records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

511140 DATABASE AND DIRECTORY PUBLISHERS

This U.S. industry comprises establishments primarily engaged in publishing compilations and collections of information or facts that are logically organized to facilitate their use. These collections may be published in print or electronic form. Electronic versions may be provided

directly to customers by the establishment or offered through on-line services or third-party vendors.

The data published with NAICS code 511140 include the following SIC industries:

2741 Miscellaneous publishing (pt)

7331 Direct mail advertising services (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111101	27111	27111	511120A	2721C	2721C	511130N pt	2731J pt	27311 pt
5111101111	2711101	2711101	511120A111	2721C10	2721C10	511130N pt	2731J pt	27313 pt
5111101216	2711111	2711111	511120A216	2721C20	2721C20	511130N pt	2731J pt	27314 pt
5111101321	2711122	2711122	511120A321	2721C50	2721C50	511130N pt	2731J pt	2731B pt
5111101426	2711132	2711132	511120A326	2721C60	2721C60	511130N pt	2731J pt	2731C pt
5111101531	2711142	2711142	511120A331	2721C70	2721C70	511130N pt	2731J pt	2731D pt
5111101636	2711152	2711152	511120A436	2721C80	2721C80	511130N pt	2731J pt	2731E pt
5111101YVW	2711100	2711100	511120A541	2721C90	2721C90	511130N pt	2731J pt	2731F pt
			511120AYVW	2721C00	2721C00	511130N11	2731J22	2731100 pt
5111103	27112	27112	511120C	2721D	2721D	511130N16	2731J24	2731100 pt
5111103111	2711201	2711201	511120C111	2721D10	2721D10	511130N121	2731J26	2731100 pt
5111103216	2711211	2711211	511120C116	2721D15	2721D15	511130N126	2731J28	2731300 pt
5111103321	2711222	2711222	511120C121	2721D24	2721D24	511130N131	2731J32	2731300 pt
5111103426	2711232	2711232	511120C191	2721D31	2721D31	511130N136	2731J34	2731300 pt
5111103531	2711242	2711242	511120C193	2721D33	2721D33	511130N141	2731J36	2731300 pt
5111103636	2711252	2711252	511120C196	2721D35	2721D35	511130N146	2731J38	2731400 pt
5111103YVW	2711200	2711200	511120CYVW	2721D00	2721D00	511130N151 pt	2731J42 pt	2731B00 pt
						511130N151 pt	2731J42 pt	2731C00 pt
5111105	27113	27113	511120W	27210	27210	511130N151 pt	2731J42 pt	2731D00 pt
5111105111	2711362	2711362	511120WYVW	2721000	2721000	511130N156	2731J44	2731E00 pt
5111105116	2711398	2711398	511120WYVW	2721002	2721002	511130N191	2731J46	2731F00 pt
5111105YVW	2711300	2711300				511130NYVW pt	2731J00 pt	2731100 pt
			5111301	27311	27311 pt	511130NYVW pt	2731J00 pt	2731300 pt
5111107	27114	27114	5111301111	2731111	2731111	511130NYVW pt	2731J00 pt	2731400 pt
5111107111	2711462	2711462	5111301216	2731112	2731112	511130NYVW pt	2731J00 pt	2731B00 pt
5111107116	2711498	2711498	5111301321	2731113	2731113	511130NYVW pt	2731J00 pt	2731C00 pt
5111107YVW	2711400	2711400	5111301426	2731114	2731114	511130NYVW pt	2731J00 pt	2731D00 pt
			5111301531	2731115	2731115	511130NYVW pt	2731J00 pt	2731E00 pt
511110W	27110	27110	5111301636	2731116	2731116	511130NYVW pt	2731J00 pt	2731F00 pt
511110WYVW	2711000	2711000	5111301741	2731121	2731121	511130NYVW pt	2731J00 pt	2731100 pt
511110WYVW	2711002	2711002	5111301846	2731123	2731123	511130NYVW pt	2731J00 pt	2731100 pt
			5111301951	2731125	2731125	511130NYVW pt	2731J00 pt	2731300 pt
5111201	27211	27211	5111301A56	2731131	2731131	511130NYVW pt	2731J00 pt	2731400 pt
5111201111	2721112	2721112	5111301YVW	2731100	2731100 pt	511130NYVW pt	2731J00 pt	2731B00 pt
5111201116	2721114	2721114				511130NYVW pt	2731J00 pt	2731C00 pt
5111201YVW	2721100	2721100	5111303	27313	27313 pt	511130W	27310 pt	2731000 pt
			5111303111	2731315	2731315	511130WYVW	2731000 pt	2731000 pt
5111203	27213	27213	5111303216	2731317	2731317	511130WYVW	2731002 pt	2731002 pt
5111203111	2721324	2721324	5111303321	2731325	2731325			
5111203116	2721325	2721325	5111303426	2731327	2731327	5111401	27416	27416
5111203121	2721327	2721327	5111303531	2731335	2731335	5111401111	2741612	2741600 pt
5111203126	2721328	2721328	5111303636	2731337	2731337	5111401116	2741614	2741600 pt
5111203131	2721330	2721330	5111303791	2731345	2731345	5111401YVW	2741600	2741600 pt
5111203136	2721332	2721332	5111303896	2731347	2731347			
5111203141	2721334	2721334	51113039YVW	2731300	2731300 pt	5111403	27417	27417
5111203146	2721335	2721335				5111403111	2741713	2741713
5111203151	2721337	2721337	5111305	27314	27314 pt	5111403116	2741716	2741716
5111203156	2721338	2721338	5111305111 pt	2731412 pt	2731411	5111403YVW	2741700	2741700
			5111305111 pt	2731412 pt	2731413			
5111203161	2721340	2721340	5111305126	2731426	2731426	5111405	27418 pt	27418 pt
5111203166	2721342	2721342	5111305191	2731428	2731428	5111405100 pt	2741800 pt	2741800 pt
5111203171	2721344	2721344	5111305YVW	2731400	2731400 pt	5111405100 pt	2741814	2741815
5111203176	2721346	2721346						
5111203YVW	2721300	2721300	5111307	2731A	2731A	5111409 pt	2741B pt	2741B pt
			5111307100	2731A00	2731A00			
5111205	27214	27214	5111309	2731B	2731B pt	5111409 pt	73311	73310 pt
5111205111	2721424	2721424	5111309100 pt	2731B00	2731B00 pt	5111409121	7331100 pt	7331000 pt
5111205116	2721425	2721425	5111309100 pt	2731B16 pt	2731B15	5111409191	741B52	2741B00 pt
5111205121	2721427	2721427	5111309100 pt	2731B16 pt	2731B17	5111409YVW pt	2741B00 pt	2741B00 pt
5111205126	2721428	2721428				5111409YVW pt	7331100 pt	7331000 pt
5111205131	2721430	2721430	511130A	2731C	2731C pt			
5111205136	2721432	2721432	511130A100 pt	2731C00	2731C00 pt	511140W pt	27410 pt	27410 pt
5111205141	2721434	2721434	511130A100 pt	2731C74 pt	2731C73	511140WYVW pt	73310	7331000 pt
5111205146	2721435	2721435	511130A100 pt	2731C74 pt	2731C75	511140WYVW pt	2741000 pt	2741000 pt
5111205151	2721437	2721437				511140WYVW pt	7331000	7331000 pt
5111205156	2721438	2721438	511130C	2731D	2731D pt	511140WYVW pt	2741002 pt	2741002 pt
			511130C111	2731D41	2731D41	511140WYVW pt	7331002	7331000 pt
5111205161	2721440	2721440	511130C216	2731D47	2731D47			
5111205166	2721442	2721442	511130C321	2731D51	2731D51	5111910 pt	27710 pt	27710 pt
5111205171	2721444	2721444	511130C426	2731D53	2731D53			
5111205176	2721446	2721446	511130CYVW	2731D00	2731D00 pt			
5111205YVW	2721400	2721400						
			511130E	2731E	2731E pt	5111910 pt	27711	27711
5111207	2721A	2721A	511130E111	2731E21	2731E21	5111910111	2771113	2771113
5111207111	2721A20	2721A20	511130E121	2731E41	2731E41	5111910216	2771115	2771115
5111207226	2721A50	2721A50	511130E126	2731E57	2731E57	5111910321	2771123 pt	2771122
5111207231	2721A70	2721A70	511130EYVW	2731E00	2731E00 pt	5111910321	2771123 pt	2771124
5111207236	2721A80	2721A80				5111910426	2771126	2771126
5111207331	2721A90	2721A90	511130G	2731F pt	2731F pt	5111910531	2771127	2771127
5111207441	2721A00	2721A00	511130G111	2731F13	2731F13	5111910536	2771129	2771129
5111207YVW	2721A00	2721A00	511130G121	2731F15	2731F15	5111910641 pt	2771134 pt	2771133
			511130G191 pt	2731F18 pt	2731F17	5111910641 pt	2771134 pt	2771135
5111209	2721B	2721B	511130G191 pt	2731F18 pt	2731F19	5111910YVW pt	2771000 pt	2771000 pt
5111209111	2721B10	2721B10	511130GYVW	2731F00 pt	2731F00 pt	5111910YVW pt	2771100	2771100
5111209216	2721B20	2721B20				5111910YVW	2771002 pt	2771002 pt
5111209321	2721B50	2721B50	511130J	2731G pt	2731G pt	5111991	27419	27419
5111209326	2721B60	2721B60	511130J100 pt	2731G00 pt	2731G00 pt	5111991100	2741900	2741900
5111209331	2721B70	2721B70	511130J100 pt	2731G59	2731G59			
5111209436	2721B80	2721B80				5111993	2741A	2741A
5111209541	2721B90	2721B90	511130L	2731H	2731H	5111993100	2741A00	2741A00
5111209YVW	2721B00	2721B00	511130L100	2731H00	2731H00			
						5111995 pt	27418 pt	27418 pt

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111995 pt.....	2741B pt.....	2741B pt	5111995346	2741B23	2741B23	5111995YWV pt....	2741800 pt.....	2741800 pt
5111995316	2741B13	2741B13	5111995352	2741B25	2741B25	5111995YWV pt....	2741B00 pt.....	2741B00 pt
5111995326	2741B15	2741B15	5111995356	2741B27	2741B27			
5111995331	2741B17	2741B17	5111995361	2741B29	2741B29	511199W	27410 pt	27410 pt
5111995336	2741B18	2741B18	5111995366	2741812	2741813	511199WYWW	2741000 pt	2741000 pt
5111995341	2741B20	2741B20	5111995391	2741B71	2741B71	511199WYWY	2741002 pt	2741002 pt

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1997

Issued November 1999

EC97M-5111E

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

Greeting Card Publishers

1997

Issued November 1999

EC97M-5111E

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division	301-457-4673
Service Sector Statistics Division	301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511191	Greeting card publishers	93	106	20 518	628 432	11 747	19 322	274 200	4 341 185	997 773	5 338 986	70 725
277160	Greeting cards (pt)	N	106	20 518	628 432	11 747	19 322	274 200	4 341 185	997 773	5 338 986	70 725

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
		Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511191, GREETING CARD PUBLISHERS												
United States	-	106	45	20 518	628 432	11 747	19 322	274 200	4 341 185	997 773	5 338 986	70 725
California	1	13	2	231	8 622	118	204	2 490	38 399	18 776	55 672	727
New York	2	7	2	111	2 266	60	126	1 088	10 699	2 005	12 772	102
Pennsylvania	-	4	3	627	12 945	557	1 165	10 366	46 942	42 992	88 817	2 305

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
511191, GREETING CARD PUBLISHERS		511191, GREETING CARD PUBLISHERS—Con.	
Companies ¹	number.. 93	Value added	\$1,000.. 4 341 185
All establishments	number.. 106	Total inventories, beginning of year	\$1,000.. 572 486
Establishments with 1 to 19 employees	number.. 61	Finished goods inventories, beginning of year	\$1,000.. 405 336
Establishments with 20 to 99 employees	number.. 16	Work-in-process inventories, beginning of year	\$1,000.. 65 033
Establishments with 100 employees or more	number.. 29	Materials and supplies inventories, beginning of year	\$1,000.. 102 117
All employees	number.. 20 518	Total inventories, end of year	\$1,000.. 565 655
Total compensation ²	\$1,000.. 807 400	Finished goods inventories, end of year	\$1,000.. 415 293
Annual payroll	\$1,000.. 628 432	Work-in-process inventories, end of year	\$1,000.. 55 048
Total fringe benefits	\$1,000.. 178 968	Materials and supplies inventories, end of year	\$1,000.. 95 314
Production workers, average for year	number.. 11 747	Gross book value of total assets at beginning of year	\$1,000.. 729 432
Production workers on March 12	number.. 11 365	Total capital expenditures (new and used)	\$1,000.. 70 725
Production workers on May 12	number.. 11 954	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 7 000
Production workers on August 12	number.. 12 317	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 63 725
Production workers on November 12	number.. 11 352	Total retirements ²	\$1,000.. 37 029
Production-worker hours	1,000.. 19 322	Gross book value of total assets at end of year	\$1,000.. 763 128
Production-worker wages	\$1,000.. 274 200	Total depreciation during year ²	\$1,000.. 39 595
Total cost of materials	\$1,000.. 997 773	Total rental payments ²	\$1,000.. 34 328
Cost of materials, parts, containers, etc., consumed	\$1,000.. 568 025	Buildings and other structures rental payments ²	\$1,000.. 12 443
Cost of resales	\$1,000.. 353 896	Machinery and equipment rental payments ²	\$1,000.. 21 885
Cost of fuels	\$1,000.. 2 704	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 024
Cost of purchased electricity	\$1,000.. 14 178	Response coverage ratio ⁴	percent.. 98
Cost of contract work	\$1,000.. 58 970	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 9 469
Quantity of electricity purchased for heat and power	1,000 kWh.. 269 465	Response coverage ratio ⁴	percent.. 98
Quantity of electricity generated less sold for heat and power	1,000 kWh.. -	Cost of purchased communications services ³	\$1,000.. 3 899
Total value of shipments	\$1,000.. 5 338 986	Response coverage ratio ⁴	percent.. 98
Primary products value of shipments	\$1,000.. 3 939 837	Cost of purchased legal services ³	\$1,000.. 2 632
Secondary products value of shipments	\$1,000.. 75 905	Response coverage ratio ⁴	percent.. 98
Total miscellaneous receipts	\$1,000.. 1 323 244	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 396
Value of resales	\$1,000.. 549 089	Response coverage ratio ⁴	percent.. 98
Contract receipts	\$1,000.. D	Cost of purchased advertising services ³	\$1,000.. 2 417
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 98
Primary products specialization ratio	percent.. 98	Cost of purchased software and other data processing services ³	\$1,000.. 1 116
Value of primary products shipments made in all industries	\$1,000.. 3 957 248	Response coverage ratio ⁴	percent.. 98
Value of primary products shipments made in this industry	\$1,000.. 3 939 837	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 725
Value of primary products shipments made in other industries	\$1,000.. 17 411	Response coverage ratio ⁴	percent.. 98
Coverage ratio	percent.. 99		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511191, GREETING CARD PUBLISHERS												
All establishments	-	106	45	20 518	628 432	11 747	19 322	274 200	4 341 185	997 773	5 338 986	70 725
Establishments with 1 to 4 employees	7	35	-	61	1 379	55	91	1 030	5 684	1 731	7 358	107
Establishments with 5 to 9 employees	8	15	-	95	2 338	73	131	1 724	10 471	3 195	13 565	217
Establishments with 10 to 19 employees	3	11	-	150	3 557	108	156	1 905	12 728	6 545	19 825	431
Establishments with 20 to 49 employees	-	11	11	330	8 061	178	355	3 714	22 905	11 880	34 258	2 073
Establishments with 50 to 99 employees	-	5	5	352	12 924	164	316	4 749	44 162	17 056	61 577	432
Establishments with 100 to 249 employees	-	12	12	2 032	59 067	1 180	2 311	29 241	331 278	130 406	468 856	8 667
Establishments with 250 to 499 employees	1	8	8	3 095	89 686	1 729	3 444	38 183	421 021	139 520	555 719	5 729
Establishments with 500 to 999 employees	-	4	4	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	-	4	4	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	-	1	1	D	D	D	D	D	D	D	D	D
Administrative records ²	9	41	-	168	3 911	140	241	2 921	18 259	5 494	23 558	392

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511191	Greeting card publishers	106	20 518	628 432	11 747	19 322	274 200	4 341 185	997 773	5 338 986	70 725

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511191	Greeting cards	N	X	X	3 957 248	N	X	X	N
5111910	Greeting card publishing	N	X	X	3 957 248	N	X	X	N
51119101	Christmas cards, counter (publishers' sales)	N	X	X	255 293	N	X	X	N
511191011	Christmas cards, counter (publishers' sales)	13	X	X	255 293	15	X	X	217 519
51119102	Christmas cards, packaged, including boxed cards (publishers' sales)	N	X	X	315 737	N	X	X	N
5111910216	Christmas cards, packaged, including boxed cards (publishers' sales)	22	X	X	315 737	20	X	X	254 632
51119103	Valentine cards (publishers' sales)	N	X	X	276 938	N	X	X	N
5111910321	Valentine cards (publishers' sales)	16	X	X	276 938	N	X	X	N
51119104	Mother's Day cards (publishers' sales)	N	X	X	212 271	N	X	X	N
5111910426	Mother's Day cards (publishers' sales)	14	X	X	212 271	10	X	X	147 921
51119105	Seasonal greeting cards other than Christmas, Valentine, and Mother's Day (publishers' sales)	N	X	X	454 211	N	X	X	N
5111910531	Easter cards (publishers' sales)	14	X	X	116 473	9	X	X	104 678
5111910536	Seasonal greeting cards other than Christmas, Valentine, Easter, and Mother's Day (publishers' sales)	15	X	X	337 738	11	X	X	180 533
51119106	Everyday greeting cards (publishers' sales)	N	X	X	1 940 876	N	X	X	N
5111910641	Everyday greeting cards (publishers' sales)	27	X	X	1 940 876	N	X	X	N
5111910Y	Greeting card publishers, nsk, total	N	X	X	501 922	N	X	X	N
5111910YWW	Greeting card publishers, nsk, for nonadministrative-record establishments	N	X	X	480 086	N	X	X	N
5111910YWY	Greeting card publishers, nsk, for administrative-record establishments	N	X	X	21 836	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
511191	GREETING CARD PUBLISHERS				
32200013	Coated paper in rolls	X	D	X	N
32200011	Coated paper in sheets	X	D	X	N
32212011	Uncoated paper in rolls	X	31 056	X	N
32212009	Uncoated paper in sheets	X	36 189	X	N
32591003	Printing ink	X	19 339	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	34 257	X	N
32223200	Purchased envelopes	X	39 563	X	N
00970099	All other materials and components, parts, containers, and supplies	X	246 714	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	50 154	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

511191 GREETING CARD PUBLISHERS

This U.S. industry comprises establishments primarily engaged in publishing greeting cards.

The data published with NAICS code 511191 include the following SIC industry:

2771 Greeting cards (pt)

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the *nsk* categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111101	27111	27111	511120A	2721C	2721C	511130N pt	2731J pt	27311 pt
5111101111	2711101	2711101	511120A111	2721C10	2721C10	511130N pt	2731J pt	27313 pt
5111101216	2711111	2711111	511120A216	2721C20	2721C20	511130N pt	2731J pt	27314 pt
5111101321	2711122	2711122	511120A321	2721C50	2721C50	511130N pt	2731J pt	2731B pt
5111101426	2711132	2711132	511120A326	2721C60	2721C60	511130N pt	2731J pt	2731C pt
5111101531	2711142	2711142	511120A331	2721C70	2721C70	511130N pt	2731J pt	2731D pt
5111101636	2711152	2711152	511120A436	2721C80	2721C80	511130N pt	2731J pt	2731E pt
5111101YVW	2711100	2711100	511120A541	2721C90	2721C90	511130N pt	2731J pt	2731F pt
			511120AYVW	2721C00	2721C00	511130N11	2731J22	2731100 pt
5111103	27112	27112				511130N16	2731J24	2731100 pt
5111103111	2711201	2711201	511120C	2721D	2721D	511130N121	2731J26	2731100 pt
5111103216	2711211	2711211	511120C111	2721D10	2721D10	511130N126	2731J28	2731300 pt
5111103321	2711222	2711222	511120C116	2721D15	2721D15	511130N131	2731J32	2731300 pt
5111103426	2711232	2711232	511120C121	2721D24	2721D24	511130N136	2731J34	2731300 pt
5111103531	2711242	2711242	511120C121	2721D24	2721D24	511130N141	2731J36	2731300 pt
5111103636	2711252	2711252	511120C191	2721D31	2721D31	511130N146	2731J38	2731400 pt
5111103YVW	2711200	2711200	511120C193	2721D33	2721D33	511130N151 pt	2731J42 pt	2731B00 pt
			511120C196	2721D35	2721D35	511130N151 pt	2731J42 pt	2731C00 pt
5111105	27113	27113	511120CYVW	2721D00	2721D00	511130N151 pt	2731J42 pt	2731D00 pt
5111105111	2711362	2711362	511120W	27210	27210	511130N151 pt	2731J42 pt	2731E00 pt
5111105116	2711398	2711398	511120WYVW	2721000	2721000	511130N151 pt	2731J42 pt	2731F00 pt
5111105YVW	2711300	2711300	511120WYVW	2721002	2721002	511130N191	2731J46	2731100 pt
						511130NYVW pt.	2731J00 pt	2731100 pt
5111107	27114	27114	5111301	27311	27311 pt	511130NYVW pt.	2731J00 pt	2731300 pt
5111107111	2711462	2711462	5111301111	2731111	2731111	511130NYVW pt.	2731J00 pt	2731400 pt
5111107116	2711498	2711498	5111301216	2731112	2731112	511130NYVW pt.	2731J00 pt	2731B00 pt
5111107YVW	2711400	2711400	5111301321	2731113	2731113	511130NYVW pt.	2731J00 pt	2731C00 pt
			5111301426	2731114	2731114	511130NYVW pt.	2731J00 pt	2731D00 pt
511110W	27110	27110	5111301531	2731115	2731115	511130NYVW pt.	2731J00 pt	2731E00 pt
511110WYVW	2711000	2711000	5111301636	2731116	2731116	511130WYVW	2731000 pt	2731000 pt
511110WYVW	2711002	2711002	5111301741	2731121	2731121	511130WYVW	2731002 pt	2731002 pt
			5111301846	2731123	2731123	5111401	27416	27416
5111201	27211	27211	5111301951	2731125	2731125	5111401111	2741612	2741600 pt
5111201111	2721112	2721112	5111301A56	2731131	2731131	5111401116	2741614	2741600 pt
5111201116	2721114	2721114	5111301YVW	2731100	2731100 pt	5111401YVW	2741600	2741600 pt
5111201YVW	2721100	2721100				5111403	27417	27417
			5111303	27313	27313 pt	5111403111	2741713	2741713
5111203	27213	27213	5111303111	2731315	2731315	5111403116	2741716	2741716
5111203111	2721324	2721324	5111303216	2731317	2731317	5111403YVW	2741700	2741700
5111203116	2721325	2721325	5111303321	2731325	2731325	5111405	27418	27418 pt
5111203121	2721327	2721327	5111303426	2731327	2731327	5111405100 pt	2741800 pt	2741800 pt
5111203126	2721328	2721328	5111303531	2731335	2731335	5111405100 pt	2741814	2741815
5111203131	2721330	2721330	5111303636	2731337	2731337	5111409 pt	2741B pt	2741B pt
5111203136	2721332	2721332	5111303791	2731345	2731345	5111409121	73311	733100 pt
5111203141	2721334	2721334	5111303896	2731347	2731347	5111409191	7331100 pt	7331000 pt
5111203146	2721335	2721335	51113039YVW	2731300	2731300 pt	5111409YVW pt	7331100 pt	7331000 pt
5111203151	2721337	2721337				5111409YVW pt	7331100 pt	7331000 pt
5111203156	2721338	2721338	5111305	27314	27314 pt	511140W pt	27410 pt	27410 pt
			5111305111 pt	2731412 pt	2731411	511140WYVW pt.	2741000 pt	2741000 pt
5111203161	2721340	2721340	5111305111 pt	2731412 pt	2731413	511140WYVW pt.	2741002 pt	2741002 pt
5111203166	2721342	2721342	5111305111 pt	2731412 pt	2731413	511140WYVW pt.	2741002 pt	2741002 pt
5111203171	2721344	2721344	5111305111 pt	2731412 pt	2731423	5111910 pt	27710 pt	27710 pt
5111203176	2721346	2721346	5111305126	2731426	2731426	5111910 pt	27710 pt	27710 pt
5111203YVW	2721300	2721300	5111305191	2731428	2731428	5111910 pt	27710 pt	27710 pt
			5111305YVW	2731400	2731400 pt	5111910 pt	27710 pt	27710 pt
5111205	27214	27214	5111307	2731A	2731A	5111910 pt	27710 pt	27710 pt
5111205111	2721424	2721424	5111307100	2731A00	2731A00	5111910 pt	27710 pt	27710 pt
5111205116	2721425	2721425	5111309	2731B	2731B pt	5111910 pt	27710 pt	27710 pt
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5111205166	2721442	2721442	511130C216	2731D47	2731D47	5111910 pt	27710 pt	27710 pt
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5111205176	2721446	2721446	511130C426	2731D53	2731D53	5111910 pt	27710 pt	27710 pt
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						5111993	2741A	2741A
						5111993100	2741A00	2741A00
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1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111995 pt.....	2741B pt.....	2741B pt	5111995346	2741B23	2741B23	5111995YWV pt....	2741800 pt	2741800 pt
5111995316	2741B13	2741B13	5111995352	2741B25	2741B25	5111995YWV pt....	2741B00 pt.....	2741B00 pt
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5111995331	2741B17	2741B17	5111995361	2741B29	2741B29	511199W	27410 pt	27410 pt
5111995336	2741B18	2741B18	5111995366	2741812	2741813	511199WYWW	2741000 pt	2741000 pt
5111995341	2741B20	2741B20	5111995391	2741B71	2741B71	511199WYWY	2741002 pt	2741002 pt

All Other Publishers

1997

Issued November 1999

EC97M-5111F

1997 Economic Census

Manufacturing

Industry Series



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ACKNOWLEDGMENTS

The staff of the Manufacturing and Construction Division prepared this report. **Judy M. Dodds**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Manufactured Durables Branch, assisted by **Mike Brown**, **Renee Coley**, **Raphael Corrado**, and **Milbren Thomas**, Section Chiefs, **Michael Zampogna**, Former Chief, Manufactured Nondurables Branch, assisted by **Allen Foreman**, **Robert Miller**, **Robert Reinard**, and **Nat Shelton**, Section Chiefs, and **Tom Lee**, **Robert Rosati**, and **Tom Flood**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Brian Appert**, **Stanis Batton**, **Carol Beasley**, **Chris Blackburn**, **Larry Blumberg**, **Vera Harris-Bourne**, **Brenda Campbell**, **Suzanne Conard**, **Vance Davis**, **Mary Ellickson**, **Matt Gaines**, **Merry Glascoe**, **Kay Hanks**, **Karen Harshbarger**, **Nancy Higgins**, **James Hinckley**, **Walter Hunter**, **Jim Jamski**, **Evelyn Jordan**, **Robert Lee**, **John Linehan**, **Paul Marck**, **Keith McKenzie**, **Philippe Morris**, **Joanna Nguyen**, **Betty Pannell**, **Joyce Pomeroy**, **Venita Powell**, **Cynthia Ramsey**, **Chris Savage**, **Arona Stovall**, **Sue Sundermann**, **Thanos Theodoropoulos**, **Dora Thomas**, **Ann Truffa**, **Ronanne Vinson**, **Keeley Voor**, **Denneth Wallace**, **Tempie Whittington**, **Lissene Witt**, and **Mike Yamaner** provided primary staff assistance.

Brian Greenberg, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Programs Methodology Branch, and **Robert Struble**, Section Chief, provided the mathematical and statistical techniques as well as the coverage operations. **Jeffrey Dalzell** and **Cathy Ritenour** provided primary staff assistance.

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by **Julius Smith Jr.** and **Baruti Taylor**, Section Chiefs, performed overall

coordination of the publication process. **Kim Credito**, **Patrick Duck**, **Chip Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

The Economic Planning and Coordination Division, **Lawrence A. Blum**, Assistant Chief for Collection Activities and **Shirin A. Ahmed**, Assistant Chief for Post-Collection Processing, assisted by **Dennis Shoemaker**, Chief, Post-Collection Census Processing Branch, **Brandy Yarbrough**, Section Chief, **Sheila Proudfoot**, **Richard Williamson**, **Andrew W. Hait**, and **Jennifer E. Lins**, was responsible for developing the systems and procedures for data collection, editing, review, correction and dissemination

The staff of the National Processing Center, **Judith N. Petty**, Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

The Geography Division staff developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Charles P. Pautler Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, assisted by **Barbara Lambert** and **Christina Arledge** were responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufacturing and Construction Branch, **Lori A. Guido** and **Roy A. Smith**, Section Chiefs, supervised the preparation of the computer programs.

Computer Services Division, **Debra Williams**, Chief, performed the computer processing.

The staff of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, performed planning, design, composition, editorial review, and printing planning and procurement for publications, Internet products, and report forms. **Cynthia G. Brooks** provided publication coordination and editing.

1997 Economic Census

Manufacturing

Industry Series



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-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The economic census furnishes an important part of the framework for such composite measures as the gross domestic product estimates, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions. Specific uses of economic census data include the following:

- Policymaking agencies of the Federal Government use the data to monitor economic activity and assess the effectiveness of policies.
- State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.
- Trade associations study trends in their own and competing industries, which allows them to keep their members informed of market changes.
- Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

ALL-NEW INDUSTRY CLASSIFICATIONS

Data from the 1997 Economic Census are published primarily on the basis of the North American Industry Classification System (NAICS), unlike earlier censuses, which were published according to the Standard Industrial Classification (SIC) system. NAICS is in the process of being adopted in the United States, Canada, and Mexico. Most economic census reports cover one of the following NAICS sectors:

21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information

52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Foodservices
81	Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

RELATIONSHIP TO SIC

While many of the individual NAICS industries correspond directly to industries as defined under the SIC system, most of the higher level groupings do not. Particular care should be taken in comparing data for retail trade, wholesale trade, and manufacturing, which are sector titles used in both NAICS and SIC, but cover somewhat different groups of industries. The industry definitions discuss the relationships between NAICS and SIC industries. Where changes are significant, it will not be possible to construct time series that include data for points both before and after 1997.

For 1997, data for auxiliary establishments (those functioning primarily to manage, service, or support the activities of their company's operating establishments, such as a central administrative office or warehouse) will not be included in the sector-specific reports. These data will be published separately.

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for the states, metropolitan areas (MAs), counties, parishes, and corporate municipalities including cities, towns, villages, and boroughs. Respondents were

required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from Internal Revenue Service tax forms is used as a basis for coding.

BASIS OF REPORTING

The economic census is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each store, factory, shop, or other location. Each establishment is assigned a separate industry classification based on its primary activity and not that of its parent company.

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 1997 data are expressed in 1997 dollars, and 1992 data, in 1992 dollars. Consequently, when making comparisons with prior years, users of the data should consider the changes in prices that have occurred.

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

All results of the 1997 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports. For more information, including a description of electronic and printed reports being issued, see the Internet site, or write to U.S. Census Bureau, Washington, DC 20233-8300, or call Customer Services at 301-457-4100.

Special Tabulations

Special tabulations of data collected in the 1997 Economic Census may be obtained, depending on availability of time and personnel, in electronic or tabular form. The data will be summaries subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) that govern the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief of the division named below, U.S. Census Bureau, Washington, DC 20233-8300. To discuss a special tabulation before submitting specifications, call the appropriate division:

Manufacturing and Construction Division 301-457-4673
Service Sector Statistics Division 301-457-2668

HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1954, 1958, and 1963. Prior to that time, individual components of the economic census were taken separately at varying intervals.

The economic census traces its beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for the 1840 Decennial Census and subsequent censuses to include mining and some commercial activities. The 1905 Manufactures Census was the first time a census was taken apart from the regular decennial population census. Censuses covering retail and wholesale trade and construction industries were added in 1930, as were some covering service trades in 1933. Censuses of construction, manufacturing, and the other business service censuses were suspended during World War II.

The 1954 Economic Census was the first census to be fully integrated: providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. It was the first census to be taken by mail, using lists of firms provided by the administrative records of other Federal agencies. Since 1963, administrative records also have been used to provide basic statistics for very small firms, reducing or eliminating the need to send them census questionnaires.

The range of industries covered in the economic censuses expanded between 1967 and 1992. The census of construction industries began on a regular basis in 1967, and the scope of service industries, introduced in 1933, was broadened in 1967, 1977, and 1987. While a few transportation industries were covered as early as 1963, it was not until 1992 that the census broadened to include all of transportation, communications, and utilities. Also new for 1992 was coverage of financial, insurance, and real estate industries. With these additions, the economic census and the separate census of governments and census of agriculture collectively covered roughly 98 percent of all economic activity.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census reports printed since 1967 are still available for sale on microfiche from the Census Bureau. CD-ROMs issued from the 1987 and 1992 Economic Censuses contain databases including nearly all data published in print, plus additional statistics, such as ZIP Code statistics, published only on CD-ROM.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1997 Economic Census and Related Statistics* at www.census.gov/econguide. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1997 Economic Census* at www.census.gov/econ/www/history.html.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with the 1997 Economic Census data:

A	Standard error of 100 percent or more.
D	Withheld to avoid disclosing data of individual companies; data are included in higher level totals.
F	Exceeds 100 percent because data include establishments with payroll exceeding revenue.
N	Not available or not comparable.
Q	Revenue not collected at this level of detail for multiestablishment firms.
S	Withheld because estimates did not meet publication standards.

V	Represents less than 50 vehicles or .05 percent.
X	Not applicable.
Y	Disclosure withheld because of insufficient coverage of merchandise lines.
Z	Less than half the unit shown.
a	0 to 19 employees.
b	20 to 99 employees.
c	100 to 249 employees.
e	250 to 499 employees.
f	500 to 999 employees.
g	1,000 to 2,499 employees.
h	2,500 to 4,999 employees.
i	5,000 to 9,999 employees.
j	10,000 to 24,999 employees.
k	25,000 to 49,999 employees.
l	50,000 to 99,999 employees.
m	100,000 employees or more.
p	10 to 19 percent estimated.
q	20 to 29 percent estimated.
r	Revised.
s	Sampling error exceeds 40 percent.
nec	Not elsewhere classified.
nsk	Not specified by kind.
–	Represents zero (page image/print only).
(CC)	Consolidated city.
(IC)	Independent city.

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Manufacturing

SCOPE

The 1997 Economic Census – Manufacturing covers all manufacturing establishments with one or more paid employees. Manufacturing is defined as the mechanical, physical, or chemical transformation of materials or substances into new products. The assembly of components into new products is also considered manufacturing, except when it is appropriately classified as construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and typically use power-driven machines and materials-handling equipment. Also included in the manufacturing sector are some establishments that make products by hand, like custom tailors and the makers of custom draperies. While manufacturers typically do not sell to the public, some establishments like bakeries and candy stores that make products on the premises may be included.

While logging and publishing are no longer in the scope of manufacturing, data for these industries are included in the manufacturing industry reports, but are not included in the manufacturing state, summary, and other reports.

GENERAL

This report, from the 1997 Economic Census – Manufacturing, is one of a series of 480 industry reports and 51 geographic area reports, each of which provides statistics for individual industries or states, respectively. Seven of the industry reports are for industries no longer in the manufacturing sector but are included with manufacturing for the 1997 census year. Also included for this sector are General, Product, and Materials Consumed Summary reports, a special report on Concentration Ratios in Manufacturing, and data files on Location of Manufacturing Plants.

Each industry report presents data for a six-digit North American Industry Classification System (NAICS) industry. A description of the particular NAICS industry may be found in Appendix B. These reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, value of shipments, capital expenditures, etc. Explanations of these and other terms may be found in Appendix A. The industry reports also include data for states with 100 employees or more in the industry.

State reports, which include the District of Columbia, present similar statistics at the “all manufacturing” level for each state and its metropolitan areas (MAs) with 250

employees or more, and for counties, consolidated cities, and places with 500 employees or more. The state reports also include six-digit NAICS level data for industries with 100 employees or more in the state.

The General Summary report contains industry and geographic area statistics summarized in one report. It includes higher levels of aggregation than the industry and state reports, as well as revisions to the data made after the release of the industry and state reports.

The Products and Materials Consumed reports summarize the products and materials data published in the industry reports. The Product Summary report also includes data from the Current Industrial Reports (CIR) and a special table with data for products that are primary to more than one industry, which are not in the industry reports.

The Concentration Ratios report publishes data on the percentage of value of shipments accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Hirschmann-Herfindahl Indexes for each industry.

The Location of Manufacturing data files contain statistics on the number of establishments for the three- and six-digit NAICS industry by state, county, place, and ZIP Code by employment-size of the establishment.

GEOGRAPHIC AREAS COVERED

Statistics at the six-digit NAICS industry level are shown for states and the District of Columbia in both the state and industry reports for cells with 100 employees or more.

The state reports also include data at the “all manufacturing” level for a variety of geographies that meet the employment criteria.

Data are available for the metropolitan areas (MAs) with 250 employees or more. The term MA is a general term used to encompass all of the specifically defined metropolitan areas. A consolidated metropolitan statistical area (CMSA) is made up of two or more contiguous primary metropolitan statistical areas (PMSAs) with a combined population of at least 1 million. A PMSA is a subdivision of a CMSA that demonstrates very strong internal economic and social links separate from the ties to other portions of the CMSA. A metropolitan statistical area (MSA) is an integrated economic and social unit with a population of at least 50,000. An MA is made up of one or more counties meeting standards of metropolitan character. In New England, cities and towns, rather than counties, are the

component geographic units. Determination of the MAs was made by the Office of Management and Budget (OMB) as of June 30, 1997. The population estimates were from the 1990 Census of Population or a subsequent special census. When applicable, the make-up of an MA is included in Appendix E. Changes to geographical boundaries are noted in Appendix D.

The state reports include data for counties with 500 employees or more. These are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs and census areas. Maryland, Missouri, Nevada, and Virginia have one or more places that are independent of county organizations. These places are treated as counties and places. The counties and places are defined as of January 1, 1997.

The state reports include data for places with 500 employees or more. Places are typically cities, towns, and villages. They may be incorporated municipalities, semi-independent municipalities, special economic urban areas (SEUAs), or other place equivalents.

The state reports also include data for consolidated cities with 500 employees or more. Consolidated cities are made up of separately incorporated municipalities.

COMPARABILITY OF THE 1992 AND 1997 CENSUSES

The adoption of the North American Industry Classification System (NAICS) has had a major impact on the comparability of data between the 1992 and 1997 censuses. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past. If industries are not comparable between the two censuses, historic data are not shown. When applicable, Appendix G shows the product class and product comparability between the two systems.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those leaving manufacturing are logging and portions of publishing. Prominent among the industries coming into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. Data for the industries coming into manufacturing as well as those leaving manufacturing are included in the manufacturing industry report series for 1997. However, the state and summary reports only include data for industries in the NAICS definition of manufacturing.

Another change resulting from the conversion to NAICS is that data for central administrative offices (CAOs) associated with manufacturing are not included along side the manufacturing data. This change affects data in the state reports and the general summary.

DISCLOSURE

In accordance with Federal law governing census reports (Title 13 of the United States Code), no data are published that would disclose the operations of an individual establishment or company. However, the number of establishments classified in a specific industry or geography is not considered a disclosure, and may be released even when other information is withheld.

The disclosure analysis for the industry statistics files is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed except for capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures that can be suppressed even though value of shipments data are published.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

The Census Bureau conducts the Annual Survey of Manufactures (ASM) in each of the 4 years between the economic censuses. The ASM is a probability-based sample of approximately 58,000 establishments and collects many of the same industry statistics (including employment, payroll, value of shipments, etc.) as the economic census. However, there are selected statistics not included in the ASM. Among these are the number of companies and establishments, detailed product and materials data, and substate geographic data.

In addition to the ASM, the Census Bureau conducts a Current Industrial Reports (CIR) program. The CIR publishes detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. For the 1997 Economic Census – Manufacturing, the annual CIR data are included in the Product Summary report.

The Census Bureau also conducts the monthly Manufacturers' Shipments, Inventories, and Orders (M3) program, which publishes detailed statistics for manufacturing industries at the U.S. level.

Table 1. Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997

[NAICS codes appear in bold type. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS or SIC code	Industry	Com-panies ¹	All estab-lish-ments ²	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511199 274120	All other publishers Miscellaneous publishing (pt) ..	2 258 N	2 502 2 502	45 398 45 398	1 262 869 1 262 869	18 683 18 683	33 835 33 835	483 330 483 330	4 319 951 4 319 951	1 292 853 1 292 853	5 604 847 5 604 847	128 945 128 945

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during the year.

Table 2. Industry Statistics for Selected States: 1997

[States that are disclosures or with less than 100 employees are not shown. For explanation of terms, see appendixes. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments			All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi-tures (\$1,000)
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511199, ALL OTHER PUBLISHERS												
United States	3	2 502	480	45 398	1 262 869	18 683	33 835	483 330	4 319 951	1 292 853	5 604 847	128 945
California	4	350	65	5 824	179 599	2 211	3 834	60 362	548 963	179 744	729 576	25 915
Connecticut	2	40	12	812	25 895	319	606	9 907	87 094	16 046	101 938	1 613
Louisiana	5	12	3	230	6 272	109	187	3 023	16 031	4 910	20 384	422
Maine	2	13	2	304	10 778	73	107	1 341	32 337	15 243	47 110	1 412
Nebraska	1	11	3	127	3 893	83	152	1 862	7 959	1 590	9 553	133
New York	3	258	61	5 492	192 724	1 783	3 405	50 621	462 957	171 349	631 408	13 754
Pennsylvania	4	89	23	2 901	78 751	1 486	2 834	34 153	506 476	139 665	652 840	11 905
South Carolina	2	29	5	281	7 704	185	283	4 088	25 817	7 612	33 444	901

* Hawaii has no incorporated places in the sense of functioning governmental units; however, in agreement with Hawaiian law, the Bureau of the Census reports data for census designated places (CDPs) which have been designated as place equivalents. Those CDPs, only for the state of Hawaii, with 2,500 or more population are recognized.

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

Table 3. Detailed Statistics by Industry: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Value	Item	Value
511199, ALL OTHER PUBLISHERS		511199, ALL OTHER PUBLISHERS—Con.	
Companies ¹ number..	2 258	Value added \$1,000..	4 319 951
All establishments number..	2 502	Total inventories, beginning of year \$1,000..	412 035
Establishments with 1 to 19 employees number..	2 022	Finished goods inventories, beginning of year \$1,000..	233 898
Establishments with 20 to 99 employees number..	409	Work-in-process inventories, beginning of year \$1,000..	81 764
Establishments with 100 employees or more number..	71	Materials and supplies inventories, beginning of year \$1,000..	96 373
All employees number..	45 398	Total inventories, end of year \$1,000..	410 312
Total compensation ² \$1,000..	1 506 590	Finished goods inventories, end of year \$1,000..	236 409
Annual payroll \$1,000..	1 262 869	Work-in-process inventories, end of year \$1,000..	87 210
Total fringe benefits \$1,000..	243 721	Materials and supplies inventories, end of year \$1,000..	86 693
Production workers, average for year number..	18 683	Gross book value of total assets at beginning of year \$1,000..	857 408
Production workers on March 12 number..	18 573	Total capital expenditures (new and used) \$1,000..	128 945
Production workers on May 12 number..	18 715	Capital expenditures for buildings and other structures (new and used) \$1,000..	21 204
Production workers on August 12 number..	18 727	Capital expenditures for machinery and equipment (new and used) \$1,000..	107 741
Production workers on November 12 number..	18 717	Total retirements ² \$1,000..	45 304
Production-worker hours 1,000..	33 835	Gross book value of total assets at end of year \$1,000..	941 049
Production-worker wages \$1,000..	483 330	Total depreciation during year ² \$1,000..	78 143
Total cost of materials \$1,000..	1 292 853	Total rental payments ² \$1,000..	94 875
Cost of materials, parts, containers, etc., consumed \$1,000..	532 097	Buildings and other structures rental payments ² \$1,000..	62 226
Cost of resales \$1,000..	32 437	Machinery and equipment rental payments ² \$1,000..	32 649
Cost of fuels \$1,000..	6 279	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	3 264
Cost of purchased electricity \$1,000..	17 231	Response coverage ratio ⁴ percent..	50
Cost of contract work \$1,000..	704 809	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	6 553
Quantity of electricity purchased for heat and power 1,000 kWh..	253 489	Response coverage ratio ⁴ percent..	50
Quantity of electricity generated less sold for heat and power 1,000 kWh..	-	Cost of purchased communications services ³ \$1,000..	23 052
Total value of shipments \$1,000..	5 604 847	Response coverage ratio ⁴ percent..	50
Primary products value of shipments \$1,000..	5 200 739	Cost of purchased legal services ³ \$1,000..	33 171
Secondary products value of shipments \$1,000..	193 544	Response coverage ratio ⁴ percent..	50
Total miscellaneous receipts \$1,000..	210 564	Cost of purchased accounting and bookkeeping services ³ \$1,000..	38 971
Value of resales \$1,000..	45 200	Response coverage ratio ⁴ percent..	50
Contract receipts \$1,000..	D	Cost of purchased advertising services ³ \$1,000..	31 377
Other miscellaneous receipts \$1,000..	D	Response coverage ratio ⁴ percent..	50
Primary products specialization ratio percent..	96	Cost of purchased software and other data processing services ³ \$1,000..	6 659
Value of primary products shipments made in all industries \$1,000..	6 141 527	Response coverage ratio ⁴ percent..	50
Value of primary products shipments made in this industry \$1,000..	5 200 739	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	649
Value of primary products shipments made in other industries \$1,000..	940 788	Response coverage ratio ⁴ percent..	50
Coverage ratio percent..	84		

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table.

³Based on ASM sample data.

⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies.

Table 4. Industry Statistics by Employment Size: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Employment size class	E ¹	All establishments		All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511199, ALL OTHER PUBLISHERS												
All establishments	3	2 502	480	45 398	1 262 869	18 683	33 835	483 330	4 319 951	1 292 853	5 604 847	128 945
Establishments with 1 to 4 employees	6	1 172	—	2 264	61 915	1 461	2 409	35 468	169 289	52 238	221 758	5 155
Establishments with 5 to 9 employees	5	444	—	2 986	91 124	1 667	2 961	49 259	239 712	75 679	315 099	7 874
Establishments with 10 to 19 employees	4	406	—	5 626	149 909	2 849	5 003	72 369	422 239	157 674	582 691	10 842
Establishments with 20 to 49 employees	4	300	300	9 123	257 231	4 138	7 242	106 418	759 090	254 619	1 007 704	23 511
Establishments with 50 to 99 employees	4	109	109	7 316	209 372	1 991	3 813	49 355	598 105	198 249	794 188	17 476
Establishments with 100 to 249 employees	4	51	51	7 507	211 637	2 418	4 476	55 914	891 965	251 551	1 136 550	21 442
Establishments with 250 to 499 employees	4	13	13	4 123	106 010	1 400	3 134	36 593	537 792	164 648	707 263	10 030
Establishments with 500 to 999 employees	—	5	5	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	2	2	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	766	—	2 274	52 555	1 239	2 258	31 781	138 128	39 382	177 621	5 263

¹Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of the figures shown: 1–10 to 19 percent; 2–20 to 29 percent; 3–30 to 39 percent; 4–40 to 49 percent; 5–50 to 59 percent; 6–60 to 69 percent; 7–70 to 79 percent; 8–80 to 89 percent; 9–90 percent or more.

²Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Table 5. Industry Statistics by Industry and Primary Product Class Specialization: 1997

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS industry or product class code	Industry or primary product class	All establishments	All employees		Production workers			Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
511199	All other publishers	2 502	45 398	1 262 869	18 683	33 835	483 330	4 319 951	1 292 853	5 604 847	128 945
5111991	Pattern publishing, including clothing patterns	21	1 046	28 979	622	1 066	15 683	163 702	33 035	196 942	6 701
5111993	Shopping news publishing	419	13 276	271 443	5 004	8 533	101 541	686 891	217 904	899 842	17 497
5111995	Other miscellaneous publishing, nec ..	416	14 051	451 457	6 547	12 178	187 916	1 718 923	496 237	2 217 781	60 672

Table 6a. Products Statistics: 1997 and 1992

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS product code	Product	1997				1992			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)			Quantity	Value (\$1,000)
511199	All other publications	N	X	X	6 141 527	N	X	X	N
5111991	Pattern publishing, including clothing patterns	N	X	X	179 917	N	X	X	214 415
51119911	Pattern publishing, including clothing patterns	N	X	X	179 917	N	X	X	N
5111991100	Pattern publishing, including clothing patterns	22	X	X	179 917	21	X	X	214 415
5111993	Shopping news publishing	N	X	X	1 030 347	N	X	X	994 491
51119931	Shopping news publishing	N	X	X	1 030 347	N	X	X	N
5111993100	Shopping news publishing	428	X	X	1 030 347	461	X	X	994 491
5111995	Other miscellaneous publishing, nec	N	X	X	2 585 764	N	X	X	N
51119953	Other miscellaneous publishing	N	X	X	2 572 942	N	X	X	N
5111995316	Card publishing, other than greeting cards, including picture postcards, sports and other trading cards, souvenir cards, etc.	31	X	X	631 404	27	X	X	810 380
5111995326	Calendar publishing	63	X	X	220 389	58	X	X	287 384
5111995331	Multimedia kit publishing	27	X	X	170 790	29	X	X	67 814
5111995336	Map, hydrographic chart, and globe cover publishing	49	X	X	178 574	30	X	X	169 163
5111995341	Atlas and gazetteer publishing	18	X	X	122 037	16	X	X	79 186
5111995346	Micropublishing (publishing in microfilm or microfiche format)	10	X	X	146 173	18	X	X	232 571
5111995352	Travel guide publishing, in brochure or pamphlet form	31	X	X	36 734	28	X	X	59 658
5111995356	Poster publishing	20	X	X	36 468	30	X	X	51 294
5111995361	Yearbook publishing	15	X	X	222 866	8	X	X	78 566
5111995366	Business service newsletter publishing	154	X	X	220 303	104	X	X	406 880
5111995391	Other miscellaneous publication publishing, including almanacs, racing forms, etc.	150	X	X	587 204	128	X	X	286 654
5111995Y	Other miscellaneous publishing, nsk	N	X	X	12 822	N	X	X	N
5111995YVW	Other miscellaneous publishing, nsk	N	X	X	12 822	N	X	X	N
511199W	All other publishers, nsk, total	N	X	X	2 345 499	N	X	X	N
511199WY	All other publishers, nsk, total	N	X	X	2 345 499	N	X	X	N
511199WYWV	All other publishers, nsk, for nonadministrative-record establishments	N	X	X	2 167 915	N	X	X	N
511199WYWY	All other publishers, nsk, for administrative -record establishments	N	X	X	177 584	N	X	X	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Table 6b. Product Class Shipments for Selected States: 1997 and 1992

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111991	PATTERN PUBLISHING, INCLUDING CLOTHING PATTERNS		
	United States	179 917	214 415
	New York	5 781	N
5111993	SHOPPING NEWS PUBLISHING		
	United States	1 030 347	994 491
	Alabama	6 937	3 220
	Arizona	11 025	13 153
	Arkansas	5 005	2 651
	California	79 827	102 694
	Colorado	5 696	6 048
	Connecticut	40 528	29 730
	Florida	69 536	83 436
	Georgia	14 101	6 597
	Hawaii	3 579	N
	Idaho	3 883	3 890

See footnotes at end of table.

Table 6b. **Product Class Shipments for Selected States: 1997 and 1992—Con.**

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1997. For meaning of abbreviations and symbols, see introductory text. For explanations of terms, see appendixes]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
		1997	1992
5111993	SHOPPING NEWS PUBLISHING—Con.		
	Illinois	51 274	37 348
	Indiana	12 092	17 427
	Iowa	24 719	17 941
	Kansas	5 720	6 269
	Kentucky	9 409	10 082
	Louisiana	13 710	5 602
	Maine	13 839	3 380
	Massachusetts	16 248	14 735
	Michigan	24 695	34 888
	Minnesota	42 302	27 164
	Mississippi	4 426	N
	Missouri	17 825	13 787
	Montana	6 443	4 224
	Nebraska	7 703	5 618
	New Hampshire	3 009	2 050
	New Jersey	31 551	30 032
	New Mexico	4 689	N
	New York	141 829	156 456
	North Carolina	17 400	22 881
	North Dakota	3 727	3 575
	Ohio	45 514	40 074
	Oregon	4 469	11 292
	Pennsylvania	47 028	23 312
	South Carolina	8 374	2 707
	South Dakota	8 631	N
	Tennessee	16 578	18 945
	Texas	69 111	60 080
	Utah	3 958	N
	Virginia	5 149	8 270
	Washington	23 873	28 818
	West Virginia	4 275	4 385
	Wisconsin	63 850	58 224
	Wyoming	2 857	N
5111995	OTHER MISCELLANEOUS PUBLISHING, NEC		
	United States	2 585 764	N
	Arizona	20 616	N
	California	297 016	N
	Colorado	133 145	N
	Connecticut	32 348	N
	District of Columb	16 643	N
	Florida	53 223	N
	Georgia	8 085	N
	Hawaii	2 158	N
	Idaho	2 247	N
	Illinois	85 289	N
	Indiana	15 014	N
	Iowa	7 009	N
	Kansas	19 346	N
	Kentucky	155 222	N
	Maryland	44 452	N
	Massachusetts	37 415	N
	Michigan	115 668	N
	Minnesota	44 613	N
	Missouri	75 922	N
	Nevada	4 042	N
	New Hampshire	11 587	N
	New Jersey	245 586	N
	New York	306 799	N
	North Carolina	11 012	N
	Ohio	15 378	N
	Oklahoma	8 099	N
	Oregon	3 418	N
	Pennsylvania	483 006	N
	South Carolina	16 706	N
	Tennessee	3 333	N
	Texas	136 124	N
	Utah	26 377	N
	Vermont	5 557	N
	Virginia	38 622	N
	Washington	11 650	N
	Wisconsin	32 823	N

Additional information is available for this item; see Appendix F.

@ Additional data are available for these codes at the aggregate U.S. level in the Current Industrial Report (CIR) series; see Appendix F for the CIR survey number and title.

\$ This product is primary to more than one industry; see Appendix F for a listing of the related product codes.

Table 7. Materials Consumed by Kind: 1997 and 1992

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

NAICS material code	Material consumed	1997		1992	
		Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
511199	ALL OTHER PUBLISHERS				
32212203	Newsprint.....	X	49 759	X	N
32200015	Coated paper.....	X	15 462	X	N
32212019	Uncoated paper.....	X	17 477	X	N
32591003	Printing ink.....	X	3 622	X	N
00970099	All other materials and components, parts, containers, and supplies.....	X	94 399	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.....	X	351 378	X	N

Additional information is available for this item; see Appendix F.

Note: For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: P 10 to 19 percent estimated; Q 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

Respondents were asked to report their beginning-of-year and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

Total inventories and three detailed components (1) finished goods, (2) work-in-process, and (3) materials, supplies, fuels, etc., were collected.

When using inventory data by stage of fabrication for “all industries” and at the three-digit subsector level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by an establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for all publication levels.

COST OF MATERIALS

This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

Included in this item are:

1. Cost of parts, components, containers, etc.—Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.

3. Cost of fuels consumed for heat and power—Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity—The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work—This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific Materials Consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the “Cost of all other materials...,” Census material code 00970099. Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the “Materials not specified by kind,” Census materials code 00971000.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive

stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

COST OF PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services.

Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment. Payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that was capitalized is considered capital expenditures and is, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Included in the cost of purchased advertising services are payments for printing, media coverage, and other advertising services and materials.

Included in the cost of purchased software and other data processing services are all purchases by the establishment from other companies. Excluded are services provided by other establishments of the same company (such as by a separate data processing unit).

Included in the cost of purchased refuse removal services are all costs of refuse removal services paid by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures.

Response Coverage Ratio

A response coverage ratio is a measure of the extent to which respondents report for an item. The estimate is made by calculating the ratio value of the weighted total employment data for all the ASM establishments that report the item to the weighted total employment data for all ASM establishments classified in an industry (reporters and non-reporters).

DEPRECIATION CHARGES FOR FIXED ASSETS

This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

EMPLOYEES

This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production Workers

This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All Other Employees

This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It

includes sales (including driver-salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office functions, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations utilized as a separate work force.

FRINGE BENEFITS

Fringe benefits are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees.

GROSS BOOK VALUE OF DEPRECIABLE ASSETS AT BEGINNING OF YEAR (BOY) AND END OF YEAR (EOY)

Total value of depreciable assets is collected on all census forms. It shows the value of depreciable assets for the beginning of year and end of year. The data encompass all fixed depreciable assets on the books of establishments. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress.

In addition, respondents were requested to make certain that assets at the beginning of the year plus capital expenditures, less retirements, equaled assets at the end of the year.

NUMBER OF ESTABLISHMENTS AND COMPANIES

A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

PAYROLL

This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' social security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payrolls of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' social security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' total supplemental labor costs (those required by Federal and state laws and those incurred voluntarily or as part of collective bargaining agreements).

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code, in contrast to the four-digit SIC code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each

product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits. This is illustrated as follows:

NAICS level	NAICS code	Description
Industry	33461	Manufacturing and reproduction of magnetic and optical media
U.S. industry	334612	Reproduction of software
Product class	3346120	Prerecorded compact disc (except software), tape, and record reproducing
BLS link code	3346120X	
Product code	3346120XXX	

As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1997 census program, information was collected on the output of almost 10,000 individual product items.

In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products (ten-digit codes), and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1992 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant (quantity produced and consumed) was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

PRIMARY PRODUCT CLASS CODE

This file presents selected statistics for establishments according to their degree of specialization in products primary to their industry. This field contains either the six-digit North American Industrial Classification System (NAICS) industry code corresponding to all establishments in the industry, or the seven-digit NAICS product class code for all establishments within the industry that are specialized in a particular product class. Product class specialization is determined by evaluating the ratio of the largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment.

PRODUCTION-WORKER HOURS

This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

QUANTITY OF ELECTRIC ENERGY CONSUMED FOR HEAT AND POWER

Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the Annual Survey of Manufactures (ASM) form. In addition, information is collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

RENTAL PAYMENTS

Total rental payments are collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

RETIREMENTS OF DEPRECIABLE ASSETS

Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during the calendar year. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

TOTAL CAPITAL EXPENDITURES (NEW AND USED)

For establishments in operation and any known plants under construction, manufacturers were asked to report their new and used expenditures for (1) permanent additions and major alterations to manufacturing establishments and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

Totals for expenditures include the costs of assets leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for land and cost of maintenance and repairs charged as current operating expenses.

For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. If an establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported.

VALUE ADDED

This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those

industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

“Value added” avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

VALUE OF SHIPMENTS

This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and sold without further processing. Included are all items made by or for the establishments from material owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of “all other costs” (including company overhead) and profit.

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments:

1. Reported contract work—Receipts for work or services that a plant performed for others on their materials.
2. Value of resales—Sales of products brought and sold without further manufacture, processing, or assembly.
3. Other miscellaneous receipts—Such as repair work, installation, sales of scrap, etc.

Industry primary product value of shipments represents one of the three components of value of shipments. These components are:

1. Primary products value of shipments.
2. Secondary product value of shipments.
3. Total miscellaneous receipts.

Primary product shipments is used in the calculations of industry specialization ratio and industry coverage ratio. The term “Value of primary products shipments made in this industry” is used in this publication and refers to the same data.

Duplication in Cost of Materials and Value of Shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

These items are not collected on the report forms but are derived from the data shown in Table 3. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

An establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1a through 5 and data on product shipments shown in Tables 6a and 6b.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

Appendix B.

NAICS Codes, Titles, and Descriptions

511199 ALL OTHER PUBLISHERS

This U.S. industry comprises establishments generally known as publishers (except newspaper, magazine, book, directory, database, music, and greeting card publishers). These establishments may publish works in print or electronic form.

The data published with NAICS code 511199 include the following SIC industry:

2741 Miscellaneous publishing (pt)

This definition comes from the 1997 NAICS Manual. However, for this industry, the 1997 Economic Census – Manufacturing implemented the conversion to NAICS differently. Data for NAICS industry 511199 include establishments primarily engaged in publishing shopping news. The NAICS definitions will be fully implemented with the 2002 Economic Census.

Appendix C.

Coverage and Methodology

MAIL/NONMAIL UNIVERSE

The manufacturing universe includes about 400,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing, but not those industries leaving the manufacturing sector in the classification change. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures (ASM). The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small single-establishment companies not sent a report form.

Approximately 40 percent of the manufacturing establishments were small single-establishment companies that were excused from filing a census report. Selection of these establishments was based on two factors: annual payroll and our ability to assign the correct six-digit NAICS industry classification to the establishment. For each four-digit Standard Industrial Classification (SIC) industry code, an annual payroll cutoff was determined. These cutoffs were derived so that the establishments with payroll less than the cutoff were expected to account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms. Establishments below the cutoff that could not be directly assigned a six-digit NAICS code were mailed a classification report which requested information for assigning NAICS industry codes. Establishments below the cutoff that could be directly assigned a six-digit NAICS code were excused from filing any report. For below cutoff establishments, information on the physical location, payroll, and receipts was obtained from the administrative records of other Federal agencies under special arrangements that safeguarded their confidentiality.

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these

establishments but were included in the product and material “not specified by kind” (nsc) categories.

The industry classification codes included in the administrative-record files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to a four-digit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes the administrative-record cases had only two- or three-digit SIC group classification codes available in the files. For the 1997 Economic Census – Manufacturing, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the appropriate six-digit NAICS level. Establishments that did not return the classification form were coded later to those six-digit NAICS industries identified as “All other” industries within the given subsector.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments sent a report form.

The establishments covered in the mail canvass were divided into three groups:

- a. ASM sample establishments.

This group accounts for approximately 15 percent of all manufacturing establishments. The ASM panel covers all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size. For more information, see the Description of the ASM Survey Sample.

In an economic census year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply additional information on gross book value of assets and capital expenditures. ASM establishments were also requested to provide information on retirements, depreciation, rental payments, and supplemental labor costs. For establishments not included in the ASM, these additional items were estimated using relationships observed in the ASM establishment data. The census statistics for these variables are a sum of the ASM establishment data and the estimated data for non-ASM establishments. ASM establishments were also requested to provide information for selected purchased services. The census statistics for the purchased service items were derived solely from the ASM establishments. See Appendix A, Explanation of Terms for an explanation of these items. The census part of the report form is 1 of 220 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the 480 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to perform. Respondents were requested to identify the products, the value of each product, and, in many cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

A wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM).

Approximately 30 percent of all manufacturing establishments were included in this group. A variable cutoff, based on administrative-record payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the 220 economic census – manufacturing regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-establishment companies (non-ASM).

This group includes approximately 15 percent of all manufacturing establishments. For those industries where application of the variable cutoff for administrative-record cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or short form was used. These establishments received 1 of the 31 versions of the short form, which requested summary product and material data and totals but no details on employment, payroll, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics because the same data were collected on the short form as on the long form. However, detailed information on products and materials consumed was not collected on the short form; thus, its use would increase the value of the nsk categories.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the 1997 Economic Census – Manufacturing was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the industry definitions in the 1997 NAICS Manual. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously. Appendix A of the 1997 NAICS Manual notes the comparability between the 1987 SIC and 1997 NAICS classification systems. When applicable, Appendix G of this report shows the product class and product comparability between the two systems for data in this report.

In the NAICS system, an industry is generally defined as a group of establishments that have similar production processes. To the extent practical, the system uses supply-based or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit SIC-based U.S. industries from 459 in 1987. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. In the new system, there are about 1,500 product classes (seven-digit codes), about 6,000 census products, and an additional 3,700 CIR products (ten-digit codes). The ten-digit products are considered the primary products of the industry with the same first six digits. These counts do not include the seven former manufacturing industries that are included in the 1997 Economic Census – Manufacturing.

For the 1997 Economic Census – Manufacturing, all establishments were classified in particular industries based on the products they produced. If an establishment made products of more than one industry, it was classified in the industry with the largest product value. For 1997, there were no “resistance rules” or “frozen industries.”

In ASM years, establishments included in the ASM sample with certainty weights are reclassified by industry only if the change in the primary activity from the prior year is significant or if the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year. However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The results of these rules covering the switching of plants from one industry classification to another are that some industries comprise different mixes of establishments in different survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the six-digit NAICS level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

Establishments frequently make products classified both in their industry (primary products) and other industries (secondary products). Industry statistics (employment, payroll, value added by manufacture, value of shipments, etc.) reflect the activities of the establishments which may make both primary and secondary products. Product statistics, however, represent the output of all establishments without regard for the classification of the producing establishment. For this reason, when relating the industry statistics, especially the value of shipments, to the product statistics, the composition of the industry’s output should be considered.

The extent to which industry and product statistics may be matched with each other is measured by the primary product specialization ratio and the coverage ratio. The primary product specialization ratio is the proportion of industry shipments accounted for by the primary products of establishments classified in the industry. The coverage ratio is the proportion of product shipments accounted for by establishments classified in the industry.

ESTABLISHMENT BASIS OF REPORTING

The economic census – manufacturing is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location or establishment. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1997, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

The 1997 Economic Census – Manufacturing excludes data for central administrative offices (CAOs). These would include separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company. These data are published in a separate report series.

DESCRIPTION OF THE ASM SURVEY SAMPLE

The annual survey of manufactures (ASM) sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1994 survey year based on the 1992 Census of Manufactures. This sample will be in place through the 1998 ASM.

In 1992, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the 1992 manufacturing population was partitioned into two components for developing estimates within the ASM; a mail stratum and a nonmail stratum.

Mail stratum. The mail stratum of the survey is comprised of larger single-location manufacturing companies and all manufacturing establishments of multiunit companies (companies that operate at more than one physical location). Approximately 230,000 of the 370,000 establishments in the 1992 census were assigned to the mail stratum. On an annual basis, the mail stratum is supplemented with larger, newly active single-location companies identified from a list provided by the Internal Revenue Service (IRS) and new manufacturing locations of multiunit companies identified from the Census Bureau's Company Organization Survey (COS).

For the 1994 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1992 census. Supplemental samples representing both 1993 and 1994 births (newly active establishments that were not included in the 1992 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 1998.

The 1994-98 ASM sample design is similar to the one used since 1984. Companies in the 1992 Census of Manufactures with manufacturing shipments of at least \$500 million were defined as company certainties. For these large companies, each manufacturing establishment is included in the mail sample. For the 1994-98 sample, there are approximately 650 certainty companies collectively accounting for over 18,000 establishments.

For the remaining portion of the mail component of the survey, the establishment was defined as the sample unit. All establishments with 250 employees or more were defined as employment certainties. In addition, all establishments producing products in SIC 3571 (Electronic Computers) were defined as certainties. Across these three arbitrary certainty classes, there were approximately 25,000 establishments included in the sample with certainty. Collectively, these certainty establishments accounted for approximately 80 percent of the total value of shipments in the 1992 Census of Manufactures.

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability

constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

This method of assigning probabilities based on product class shipments is motivated by our primary desire to produce reliable estimates of both product class and industry shipments. The high correlation between shipments and employment, value-added, and other general statistics assures that these variables will also be well represented by the sample. The actual sample selection procedure uses an independent chance of selection method (Poisson sampling) which permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

Nonmail component. The initial nonmail component of the survey was comprised of approximately 140,000 small, single-establishment companies that were tabulated as administrative records in the 1992 Census of Manufactures. The nonmail stratum is also supplemented annually using the list of newly active single-location companies provided by the Internal Revenue Service (IRS) and payroll cutoffs. Companies with payroll below the payroll cutoff are added to the nonmail stratum. For this portion of the population, sampling is not used. The data for this group are estimated based on selected information obtained annually from the administrative records of the IRS and Social Security Administration (SSA). This administrative information, which includes payroll, total employment, industry classification, and physical location, is obtained under conditions which safeguard the confidentiality of both tax and census records.

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

Most of the ASM estimates derived for the mail stratum are computed using a difference estimator. At the establishment level, there is a strong correlation between the current-year data values and the corresponding 1992 (base) data values. Therefore, within the mailed stratum, for each item at each level of aggregation, an estimate of the "difference" between the current year and the base year is computed from sample cases and added to the corresponding base-year values. For the 1993-1997 ASM estimates, the 1992 Census of Manufactures values serve as the base year. For the 1998 ASM, the base will be updated to be the 1997 Economic Census – Manufacturing.

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference

estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

For the nonmail stratum, estimates for payroll and employment are directly tabulated from the administrative-record data provided by IRS and SSA. Estimates of data other than payroll and employment are developed from industry averages. Although the nonmail stratum contains approximately 170,000 individual establishments in 1994, it accounts for less than 2 percent of the estimate for total value of shipments at the total manufacturing level.

Corresponding estimates for the mail and nonmail components are combined to produce the estimates included in this publication.

QUALIFICATIONS OF THE ASM DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

The particular sample selected for the ASM is one of many similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretically comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected ASM statistics in this report. They are represented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete-coverage value would be included in the range:

From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown at 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total, and almost certain confidence that the interval 47,000 to 53,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected during the Census Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown. Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be combined with higher level totals, creating a broader aggregate, which then may be of acceptable reliability.

DATA FROM THE CURRENT INDUSTRIAL REPORTS (CIR)

The CIR program provides product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. When detail product data are collected in the CIR, they are not also collected in the census. However, the annual CIR data are included in the census Product Summary report.

The CIR program uses a unified data collection, processing, and publication system. The Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic

census – manufacturing. The economic census – manufacturing provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. While the CIR program includes both mandatory and voluntary surveys, the annual data are mandatory.

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

Data for cost of materials and value of shipments include varying amounts of duplication, especially at higher levels of aggregation. This is because the products of one establishment may be the materials of another. The value added statistics avoid this duplication and are, for most purposes, the best measure for comparing the relative economic importance of industries and geographic areas.

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

The 1997 Economic Census – Manufacturing shows value of shipments data for industries and products. In the industry statistics tables and files, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in the products statistics tables and files represent the total value of all products shipped that are classified as primary to an industry regardless of the classification of the producing establishment.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

Appendix F. Footnotes for Products Statistics and Materials Consumed by Kind

Not applicable for this report.

Appendix G. Comparability of Product Classes and Product Codes: 1997 to 1992

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111101	27111	27111	511120A	2721C	2721C	511130N pt	2731J pt	27311 pt
5111101111	2711101	2711101	511120A111	2721C10	2721C10	511130N pt	2731J pt	27313 pt
5111101216	2711111	2711111	511120A216	2721C20	2721C20	511130N pt	2731J pt	27314 pt
5111101321	2711122	2711122	511120A321	2721C50	2721C50	511130N pt	2731J pt	2731B pt
5111101426	2711132	2711132	511120A326	2721C60	2721C60	511130N pt	2731J pt	2731C pt
5111101531	2711142	2711142	511120A331	2721C70	2721C70	511130N pt	2731J pt	2731D pt
5111101636	2711152	2711152	511120A436	2721C80	2721C80	511130N pt	2731J pt	2731E pt
5111101YVW	2711100	2711100	511120A541	2721C90	2721C90	511130N pt	2731J pt	2731F pt
			511120AYVW	2721C00	2721C00	511130N11	2731J22	2731100 pt
5111103	27112	27112				511130N16	2731J24	2731100 pt
5111103111	2711201	2711201	511120C	2721D	2721D	511130N121	2731J26	2731100 pt
5111103216	2711211	2711211	511120C111	2721D10	2721D10	511130N126	2731J28	2731300 pt
5111103321	2711222	2711222	511120C116	2721D15	2721D15	511130N131	2731J32	2731300 pt
5111103426	2711232	2711232	511120C121	2721D24	2721D24	511130N136	2731J34	2731300 pt
5111103531	2711242	2711242	511120C121	2721D31	2721D31	511130N141	2731J36	2731300 pt
5111103636	2711252	2711252	511120C193	2721D33	2721D33	511130N146	2731J38	2731400 pt
5111103YVW	2711200	2711200	511120C196	2721D35	2721D35	511130N151 pt	2731J42 pt	2731B00 pt
			511120CYVW	2721D00	2721D00	511130N151 pt	2731J42 pt	2731C00 pt
5111105	27113	27113	511120W	27210	27210	511130N151 pt	2731J42 pt	2731D00 pt
5111105111	2711362	2711362	511120WYVW	2721000	2721000	511130N156	2731J44	2731E00 pt
5111105116	2711398	2711398	511120WYVW	2721002	2721002	511130N161	2731J46	2731F00 pt
5111105YVW	2711300	2711300				511130NYVW pt.	2731J00 pt	2731100 pt
			5111301	27311	27311 pt	511130NYVW pt.	2731J00 pt	2731300 pt
5111107	27114	27114	5111301111	2731111	2731111	511130NYVW pt.	2731J00 pt	2731400 pt
5111107111	2711462	2711462	5111301216	2731112	2731112	511130NYVW pt.	2731J00 pt	2731B00 pt
5111107116	2711498	2711498	5111301321	2731113	2731113	511130NYVW pt.	2731J00 pt	2731C00 pt
5111107YVW	2711400	2711400	5111301426	2731114	2731114	511130NYVW pt.	2731J00 pt	2731D00 pt
			5111301531	2731115	2731115	511130NYVW pt.	2731J00 pt	2731E00 pt
511110W	27110	27110	5111301636	2731116	2731116	511130WYVW	2731000 pt	2731000 pt
511110WYVW	2711000	2711000	5111301741	2731121	2731121	511130WYVW	2731002 pt	2731002 pt
511110WYVW	2711002	2711002	5111301846	2731123	2731123	5111401	27416	27416
			5111301951	2731125	2731125	5111401111	2741612	2741600 pt
5111201	27211	27211	5111301A56	2731131	2731131	5111401116	2741614	2741600 pt
5111201111	2721112	2721112	5111301YVW	2731100	2731100 pt	5111401YVW	2741600	2741600 pt
5111201116	2721114	2721114				5111403	27417	27417
5111201YVW	2721100	2721100	5111303	27313	27313 pt	5111403111	2741713	2741713
			5111303111	2731315	2731315	5111403116	2741716	2741716
5111203	27213	27213	5111303216	2731317	2731317	5111403YVW	2741700	2741700
5111203111	2721324	2721324	5111303321	2731325	2731325	5111405	27418	27418 pt
5111203116	2721325	2721325	5111303426	2731327	2731327	5111405100 pt	2741800 pt	2741800 pt
5111203121	2721327	2721327	5111303531	2731335	2731335	5111405100 pt	2741814	2741815
5111203126	2721328	2721328	5111303636	2731337	2731337	5111409 pt.	2741B pt	2741B pt
5111203131	2721330	2721330	5111303791	2731345	2731345	5111409121	73311	73310 pt
5111203136	2721332	2721332	5111303896	2731347	2731347	5111409191	7331100 pt	7331000 pt
5111203141	2721334	2721334	51113039YVW	2731300	2731300 pt	5111409YVW pt.	7331100 pt	7331000 pt
5111203146	2721335	2721335				5111409YVW pt.	7331100 pt	7331000 pt
5111203151	2721337	2721337	5111305	27314	27314 pt	511140W pt.	27410 pt	27410 pt
5111203156	2721338	2721338	5111305111 pt	2731412 pt	2731411	511140WYVW pt.	2741000 pt	2741000 pt
			5111305111 pt	2731412 pt	2731413	511140WYVW pt.	2741002 pt	2741002 pt
5111203161	2721340	2721340	5111305111 pt	2731412 pt	2731423	511140WYVW pt.	2741002 pt	2741002 pt
5111203166	2721342	2721342	5111305126	2731426	2731426	5111910 pt.	27710 pt	27710 pt
5111203171	2721344	2721344	5111305191	2731428	2731428	5111910 pt.	27711	27711
5111203176	2721346	2721346	5111305YVW	2731400	2731400 pt	5111910111	2771113	2771113
5111203YVW	2721300	2721300				5111910216	2771115	2771115
			5111307	2731A	2731A	5111910321	2771123 pt	2771122
5111205	27214	27214	5111307100	2731A00	2731A00	5111910321	2771123 pt	2771124
5111205111	2721424	2721424				5111910426	2771126	2771126
5111205116	2721425	2721425	5111309	2731B	2731B pt	5111910531	2771127	2771127
5111205121	2721427	2721427	5111309100 pt	2731B00	2731B00 pt	5111910536	2771129	2771129
5111205126	2721428	2721428	5111309100 pt	2731B16 pt.	2731B15	5111910641 pt	2771134 pt	2771133
5111205131	2721430	2721430	5111309100 pt	2731B16 pt.	2731B17	5111910641 pt	2771134 pt	2771135
5111205136	2721432	2721432	511130A	2731C	2731C pt	5111910YVW pt.	2771000 pt	2771000 pt
5111205141	2721434	2721434	511130A100 pt.	2731C00	2731C00 pt	5111910YVW pt.	2771100	2771100
5111205146	2721435	2721435	511130A100 pt.	2731C74 pt.	2731C73	5111910YVW	2771002 pt	2771002 pt
5111205151	2721437	2721437	511130A100 pt.	2731C74 pt.	2731C75	5111991	27419	27419
5111205156	2721438	2721438				5111991100	2741900	2741900
			511130C	2731D	2731D pt	5111993	2741A	2741A
5111205161	2721440	2721440	511130C111	2731D41	2731D41	5111993100	2741A00	2741A00
5111205166	2721442	2721442	511130C216	2731D47	2731D47			
5111205171	2721444	2721444	511130C321	2731D51	2731D51	5111995 pt.	27418 pt	27418 pt
5111205176	2721446	2721446	511130C426	2731D53	2731D53			
5111205YVW	2721400	2721400	511130CYVW	2731D00	2731D00 pt			
5111207	2721A	2721A	511130E	2731E	2731E pt			
5111207111	2721A20	2721A20	511130E111	2731E21	2731E21			
5111207226	2721A50	2721A50	511130E121	2731E41	2731E41			
5111207231	2721A70	2721A70	511130E126	2731E57	2731E57			
5111207336	2721A80	2721A80	511130EYVW	2731E00	2731E00 pt			
5111207441	2721A90	2721A90						
5111207YVW	2721A00	2721A00	511130G	2731F pt	2731F pt			
			511130G111	2731F13	2731F13			
5111209	2721B	2721B	511130G121	2731F15	2731F15			
5111209111	2721B10	2721B10	511130G191 pt.	2731F18 pt.	2731F17			
5111209216	2721B20	2721B20	511130G191 pt.	2731F18 pt.	2731F19			
5111209321	2721B50	2721B50	511130GYVW	2731F00 pt.	2731F00 pt			
5111209326	2721B60	2721B60						
5111209331	2721B70	2721B70	511130J	2731G pt.	2731G pt			
5111209436	2721B80	2721B80	511130J100 pt	2731G00 pt	2731G00 pt			
5111209541	2721B90	2721B90	511130J100 pt	2731G59	2731G59			
5111209YVW	2721B00	2721B00						
			511130L	2731H	2731H			
			511130L100	2731H00	2731H00			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
5111995 pt.....	2741B pt.....	2741B pt	5111995346	2741B23	2741B23	5111995YWV pt....	2741800 pt	2741800 pt
5111995316	2741B13	2741B13	5111995352	2741B25	2741B25	5111995YWV pt....	2741B00 pt.....	2741B00 pt
5111995326	2741B15	2741B15	5111995356	2741B27	2741B27			
5111995331	2741B17	2741B17	5111995361	2741B29	2741B29	511199W	27410 pt	27410 pt
5111995336	2741B18	2741B18	5111995366	2741812	2741813	511199WYWW	2741000 pt	2741000 pt
5111995341	2741B20	2741B20	5111995391	2741B71	2741B71	511199WYWY	2741002 pt	2741002 pt

