

Sawmills

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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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-- 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)				
321113	Sawmills	4 035	4 403	118 954	3 172 315	102 395	211 613	2 518 788	8 540 717	16 229 478	24 656 573	1 081 252
242110	Sawmills & planing mills, general (pt)	N	4 332	118 612	3 165 859	102 098	211 067	2 513 414	8 529 836	16 213 164	24 628 815	1 080 081
242910	Special product sawmills, n.e.c. (pt)	N	71	342	6 456	297	546	5 374	10 881	16 314	27 758	1 171
243910	Structural wood members, n.e.c. (pt)	N	-	-	-	-	-	-	-	-	-	-

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)
321113, SAWMILLS												
United States	1	4 403	1 363	118 954	3 172 315	102 395	211 613	2 518 788	8 540 717	16 229 478	24 656 573	1 081 252
Alabama	1	138	70	5 877	152 327	5 055	11 367	117 333	435 685	889 923	1 319 311	51 134
Alaska	-	19	3	219	8 894	178	387	6 598	23 945	25 681	44 747	1 203
Arkansas	-	164	55	5 521	143 722	4 902	10 870	120 047	434 633	810 630	1 229 150	84 516
California	1	97	48	8 122	271 361	7 081	15 577	223 574	780 894	1 268 418	2 059 160	54 407
Colorado	1	25	6	388	8 422	338	614	6 836	18 558	29 135	46 162	3 434
Florida	1	52	21	1 814	44 359	1 475	3 347	34 948	136 942	261 372	403 209	19 159
Georgia	-	127	60	6 371	162 532	5 118	11 676	120 460	490 671	1 220 313	1 705 937	53 935
Idaho	-	66	33	3 676	125 764	3 283	6 982	105 208	292 468	688 969	967 204	26 063
Illinois	3	57	4	415	8 870	362	591	6 873	17 294	23 217	40 528	1 601
Indiana	2	122	26	1 886	40 848	1 558	2 970	30 767	97 589	126 515	221 300	10 467
Kentucky	2	181	54	3 671	65 917	3 241	5 941	52 552	171 563	221 508	391 409	24 320
Ohio	1	71	28	2 270	59 975	1 922	4 235	47 778	173 371	381 867	553 707	23 475
Maryland	3	41	16	939	19 895	738	1 448	15 734	53 361	66 649	119 167	5 089
Massachusetts	3	37	8	415	9 363	317	587	6 931	21 487	25 118	45 903	2 018
Michigan	3	156	34	2 211	53 588	1 891	3 684	40 796	124 393	192 688	316 458	17 565
Minnesota	2	60	10	918	21 812	773	1 514	16 270	49 614	66 324	115 588	3 791
Mississippi	1	138	74	5 732	142 163	5 105	11 216	117 371	452 434	949 950	1 400 637	67 653
Missouri	5	232	26	2 010	36 189	1 764	2 728	28 298	93 058	148 512	241 356	9 973
Montana	-	52	19	2 289	67 357	2 074	4 091	58 565	183 450	342 406	520 460	8 375
New York	4	138	38	2 627	69 638	2 144	4 584	50 959	187 365	311 711	503 668	21 376
North Carolina	1	246	85	6 074	158 921	5 225	10 881	121 673	452 531	677 796	1 126 813	92 891
Ohio	3	132	31	1 978	39 967	1 713	3 103	32 963	104 676	154 080	260 451	11 327
Oregon	-	147	84	10 668	342 279	9 449	19 521	281 431	848 373	2 301 513	3 132 321	117 076
Pennsylvania	3	342	64	4 965	103 922	4 212	7 342	76 718	294 984	432 503	720 675	24 938
South Carolina	-	72	40	3 285	94 410	2 795	6 152	69 217	311 000	570 286	882 819	31 323
South Dakota	2	10	3	406	10 758	357	692	8 991	26 414	42 267	69 813	2 336
Tennessee	3	249	50	3 420	72 558	2 880	5 079	53 410	158 380	242 072	400 326	20 120
Texas	1	112	40	3 002	70 369	2 550	5 458	58 470	201 191	413 456	605 684	26 467
Virginia	1	241	78	4 513	107 011	3 897	7 883	83 337	277 343	390 636	666 343	44 943
Washington	1	189	74	9 664	326 028	8 389	17 837	264 345	794 926	1 740 864	2 508 611	119 938
West Virginia	2	154	47	2 798	56 102	2 562	4 783	47 630	168 724	255 149	422 082	13 091
Wisconsin	2	163	39	3 122	68 639	2 504	4 656	47 594	156 981	218 857	376 636	14 689

* 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
321113, SAWMILLS		321113, SAWMILLS—Con.	
Companies ¹	number.. 4 035	Value added	\$1,000.. 8 540 717
All establishments	number.. 4 403	Total inventories, beginning of year	\$1,000.. 2 882 507
Establishments with 1 to 19 employees	number.. 3 040	Finished goods inventories, beginning of year	\$1,000.. 1 116 798
Establishments with 20 to 99 employees	number.. 1 061	Work-in-process inventories, beginning of year	\$1,000.. 692 093
Establishments with 100 employees or more	number.. 302	Materials and supplies inventories, beginning of year	\$1,000.. 1 073 616
All employees	number.. 118 954	Total inventories, end of year	\$1,000.. 3 135 244
Total compensation ²	\$1,000.. 4 004 181	Finished goods inventories, end of year	\$1,000.. 1 188 684
Annual payroll	\$1,000.. 3 172 315	Work-in-process inventories, end of year	\$1,000.. 733 829
Total fringe benefits	\$1,000.. 831 866	Materials and supplies inventories, end of year	\$1,000.. 1 212 731
Production workers, average for year	number.. 102 395	Gross book value of total assets at beginning of year	\$1,000.. 9 672 134
Production workers on March 12	number.. 101 340	Total capital expenditures (new and used)	\$1,000.. 1 081 252
Production workers on May 12	number.. 102 450	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 153 263
Production workers on August 12	number.. 103 261	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 927 989
Production workers on November 12	number.. 102 529	Total retirements ²	\$1,000.. 277 929
Production-worker hours	1,000.. 211 613	Gross book value of total assets at end of year	\$1,000.. 10 475 457
Production-worker wages	\$1,000.. 2 518 788	Total depreciation during year ²	\$1,000.. 629 420
Total cost of materials	\$1,000.. 16 229 478	Total rental payments ²	\$1,000.. 79 877
Cost of materials, parts, containers, etc., consumed	\$1,000.. 14 759 397	Buildings and other structures rental payments ²	\$1,000.. 25 498
Cost of resales	\$1,000.. 482 945	Machinery and equipment rental payments ²	\$1,000.. 54 379
Cost of fuels	\$1,000.. 134 224	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 17 323
Cost of purchased electricity	\$1,000.. 355 566	Response coverage ratio ⁴	percent.. 69
Cost of contract work	\$1,000.. 497 346	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 386 785
Quantity of electricity purchased for heat and power	1,000 kWh.. 6 791 190	Response coverage ratio ⁴	percent.. 69
Quantity of electricity generated less sold for heat and power	1,000 kWh.. 446 243	Cost of purchased communications services ³	\$1,000.. 20 289
Total value of shipments	\$1,000.. 24 656 573	Response coverage ratio ⁴	percent.. 69
Primary products value of shipments	\$1,000.. 22 368 986	Cost of purchased legal services ³	\$1,000.. 9 863
Secondary products value of shipments	\$1,000.. 755 550	Response coverage ratio ⁴	percent.. 69
Total miscellaneous receipts	\$1,000.. 1 532 037	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 14 025
Value of resales	\$1,000.. 545 527	Response coverage ratio ⁴	percent.. 69
Contract receipts	\$1,000.. 28 252	Cost of purchased advertising services ³	\$1,000.. 5 651
Other miscellaneous receipts	\$1,000.. 958 258	Response coverage ratio ⁴	percent.. 69
Primary products specialization ratio	percent.. 96	Cost of purchased software and other data processing services ³	\$1,000.. 5 311
Value of primary products shipments made in all industries	\$1,000.. 23 369 697	Response coverage ratio ⁴	percent.. 69
Value of primary products shipments made in this industry	\$1,000.. 22 368 986	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 6 275
Value of primary products shipments made in other industries	\$1,000.. 1 000 711	Response coverage ratio ⁴	percent.. 69
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)				
321113, SAWMILLS												
All establishments	1	4 403	1 363	118 954	3 172 315	102 395	211 613	2 518 788	8 540 717	16 229 478	24 656 573	1 081 252
Establishments with 1 to 4 employees	6	1 426	—	2 831	50 450	2 646	3 685	41 976	153 837	309 035	467 269	18 887
Establishments with 5 to 9 employees	4	796	—	5 445	101 287	4 643	7 375	84 622	270 110	452 084	724 835	28 439
Establishments with 10 to 19 employees	3	818	—	11 214	223 855	9 587	16 288	181 192	603 924	972 071	1 572 678	62 656
Establishments with 20 to 49 employees	1	677	677	20 889	485 001	17 645	33 870	362 103	1 235 632	2 165 834	3 392 520	146 319
Establishments with 50 to 99 employees	1	384	384	26 939	708 141	23 249	50 395	547 531	1 958 148	3 463 488	5 393 347	259 765
Establishments with 100 to 249 employees	—	261	261	37 471	1 176 522	32 651	73 469	956 317	3 213 084	6 899 526	10 051 177	420 778
Establishments with 250 to 499 employees	—	38	38	11 521	340 850	9 632	21 627	272 029	883 307	1 748 725	2 604 250	115 487
Establishments with 500 to 999 employees	4	2	2	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	1 425	—	5 062	78 753	4 528	5 940	64 479	200 506	322 995	524 837	22 197

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)				
321113	Sawmills	4 403	118 954	3 172 315	102 395	211 613	2 518 788	8 540 717	16 229 478	24 656 573	1 081 252
3211131	Hardwood lumber, not edge worked, not manufactured from purchased lumber	1 063	31 730	731 404	27 008	53 610	560 164	1 850 440	2 593 935	4 433 523	232 504
3211133	Softwood lumber, not edge worked, not manufactured from purchased lumber	735	62 403	1 909 094	54 027	120 191	1 535 842	5 310 495	10 856 205	16 068 019	689 414
3211135	Wood chips, except field chips	168	2 829	85 374	2 185	4 513	58 979	291 244	1 023 053	1 314 056	36 242
3211137	Wood ties, siding, shingles, and shakes and contract sawing of logs owned by others	89	1 520	35 757	1 332	2 672	30 477	76 837	129 510	201 862	15 567

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)
321113	Sawmill products	N	X	X	23 369 697	N	X	X	N
3211131	Hardwood lumber, not edge worked, not manufactured from purchased lumber	N	X	X	3 880 815	N	X	X	N
32111311	Hardwood lumber, not edge worked, not manufactured from purchased lumber	N	X	X	2 994 658	N	X	X	N
3211131111	Beech rough lumber, not edge worked, not manufactured from purchased lumber \$	64	X	X	58 003	N	X	X	N
3211131121	Oak rough lumber, not edge worked, not manufactured from purchased lumber \$	664	X	91 945.8	1 229 999	N	X	N	N
3211131131	Other hardwood rough lumber, not edge worked, not manufactured from purchased lumber \$	696	X	92 431.5	1 331 736	N	X	N	N
3211131141	Hardwood dressed lumber, not edge worked, not manufactured from purchased lumber \$	85	X	9538.7	374 920	N	X	N	N
3211131Y	Hardwood lumber, not edge worked, not manufactured from purchased lumber, nsk	N	X	X	886 157	N	X	X	N
3211131YVW	Hardwood lumber, not edge worked, not manufactured from purchased lumber, nsk	N	X	X	886 157	N	X	X	N
3211133	Softwood lumber, not edge worked, not manufactured from purchased lumber	N	X	X	14 106 372	N	X	X	N
32111331	Softwood rough lumber, not edge worked, not manufactured from purchased lumber	N	X	X	2 746 931	N	X	X	N
3211133111	Softwood rough lumber, less than 2 inches in nominal thickness, not edge worked, not manufactured from purchased lumber \$	262	X	D	D	N	X	N	N
3211133121	Softwood rough 2-inch lumber, 2 inches in nominal thickness only, not edge worked, not manufactured from purchased lumber \$	161	X	D	D	N	X	N	N
3211133131	Softwood rough lumber and timbers, more than 2 inches in nominal thickness, not edge worked, not manufactured from purchased lumber \$	175	X	S	460 731	N	X	N	N
32111332	Softwood dressed lumber, less than 2 inches in nominal thickness, not edge worked, not manufactured from purchased lumber	N	X	X	1 869 879	N	X	X	N
3211133241	Softwood dressed lumber, less than 2 inches in nominal thickness, not edge worked, not manufactured from purchased lumber \$	194	X	3 645.9	1 869 879	N	X	N	N
32111333	Softwood dressed 2-inch lumber, 2 inches in nominal thickness only, not edge worked, not manufactured from purchased lumber	N	X	X	6 433 674	N	X	X	N
3211133351	Softwood dressed 2-inch lumber, 2 inches in nominal thickness only, not edge worked, not manufactured from purchased lumber \$	185	X	16 349.1	6 433 674	N	X	N	N
32111334	Softwood dressed lumber and timbers more than 2 inches in nominal thickness, not edge worked, not manufactured from purchased lumber	N	X	X	985 059	N	X	X	N
3211133461	Softwood dressed lumber and timbers, more than 2 inches in nominal thickness, not edge worked, not manufactured from purchased lumber \$	117	X	2 141.7	985 059	N	X	N	N
3211133Y	Softwood lumber, not edge worked, not manufactured from purchased lumber, nsk	N	X	X	2 070 829	N	X	X	N
3211133YVW	Softwood lumber, not edge worked, not manufactured from purchased lumber, nsk	N	X	X	2 070 829	N	X	X	N
3211135	Wood chips, except field chips	N	X	X	2 589 475	N	X	X	2 596 693
32111351	Wood chips, except field chips, measured in short tons	N	X	X	1 667 604	N	X	X	N
3211135111	Softwood chips, except field chips, measured in short tons	330	X	P39 536.7	1 170 025	321	X	35 428.8	1 045 123
3211135121	Hardwood chips, except field chips, measured in short tons	400	X	S	497 579	321	X	S	314 827

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)
321113	Sawmill products—Con.								
3211135	Wood chips, except field chips—Con.								
32111352	Wood chips, except field chips, measured in standard units (one standard unit, 200 cu ft of gravity packed chips, one standard cord)	N	X	X	702 753	N	X	X	N
3211135231	Softwood chips, except field chips, measured in standard units (one standard unit, 200 cu ft of gravity packed chips, one standard cord)	1,000 standard units							
3211135241	Hardwood chips, except field chips, measured in standard units (one standard unit, 200 cu ft of gravity packed chips, one standard cord)	145	X	S	518 232	209	X	13 202.9	836 447
3211135241	Hardwood chips, except field chips, measured in standard units (one standard unit, 200 cu ft of gravity packed chips, one standard cord)	1,000 standard units							
3211135Y	Wood chips, except field chips, nsk	80	X	S	184 521	108	X	95 292.6	238 700
3211135YWW	Wood chips, except field chips, nsk	N	X	X	219 118	N	X	X	N
3211137	Wood chips, except field chips, nsk	N	X	X	219 118	N	X	X	161 596
3211137	Wood ties, siding, shingles, and shakes and contract sawing of logs owned by others	N	X	X	237 443	N	X	X	N
32111371	Wood ties, siding, shingles, and shakes and contract sawing of logs owned by others	N	X	X	179 564	N	X	X	N
3211137111	Railway cross-ties and mine ties (untreated)	78	X	S	63 785	89	X	N	52 168
3211137121	Wood siding (weatherboards or clapboards), including drilled or treated, except treated with permanent wood preservatives	21	X	S	75 357	17	X	P60.2	46 380
3211137131	Wood shingles and shakes	16	X	S	11 138	N	X	N	N
3211137141	Receipts for contract or custom sawing of logs owned by others	33	X	X	29 284	51	X	X	33 946
3211137Y	Wood ties, siding, shingles, and shakes and contract sawing of logs owned by others, nsk	N	X	X	57 879	N	X	X	N
3211137YWW	Wood ties, siding, shingles, and shakes and contract sawing of logs owned by others, nsk	N	X	X	57 879	N	X	X	N
321113W	Sawmill products, nsk, total	N	X	X	2 555 592	N	X	X	N
321113WY	Sawmill products, nsk, total	N	X	X	2 555 592	N	X	X	N
321113WYWW	Sawmill products, nsk, for non-administrative-record establishments	N	X	X	2 046 685	N	X	X	N
321113WYWW	Sawmill products, nsk, for administrative-record establishments	N	X	X	508 907	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
3211131	HARDWOOD LUMBER, NOT EDGE WORKED, NOT MANUFACTURED FROM PURCHASED LUMBER		
	United States	3 880 815	N
	Alabama	119 324	N
	Arkansas	117 184	N
	California	2 233	N
	Florida	17 967	N
	Georgia	90 951	N
	Illinois	20 079	N
	Indiana	131 375	N
	Iowa	40 918	N
	Kentucky	251 664	N
	Louisiana	63 387	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	
3211131	HARDWOOD LUMBER, NOT EDGE WORKED, NOT MANUFACTURED FROM PURCHASED LUMBER—Con.			
	Maine	24 234	N	
	Maryland	31 959	N	
	Massachusetts	10 558	N	
	Michigan	110 507	N	
	Minnesota	21 831	N	
	Mississippi	153 308	N	
	Missouri	104 977	N	
	New Hampshire	18 584	N	
	New York	286 644	N	
	North Carolina	214 742	N	
	Ohio	176 102	N	
	Oklahoma	9 464	N	
	Oregon	67 943	N	
	Pennsylvania	404 477	N	
	South Carolina	45 860	N	
	Tennessee	248 053	N	
	Texas	50 742	N	
	Vermont	55 871	N	
	Virginia	235 427	N	
	Washington	233 917	N	
	West Virginia	291 561	N	
	Wisconsin	190 816	N	
	3211133	SOFTWOOD LUMBER, NOT EDGE WORKED, NOT MANUFACTURED FROM PURCHASED LUMBER		
		United States	14 106 372	N
Alabama		803 149	N	
Arizona		45 962	N	
Arkansas		817 759	N	
California		1 758 190	N	
Colorado		35 359	N	
Florida		244 798	N	
Georgia		998 557	N	
Idaho		823 895	N	
Indiana		2 985	N	
Kentucky		14 057	N	
Louisiana		412 891	N	
Maine		262 045	N	
Maryland		29 220	N	
Massachusetts		10 809	N	
Michigan		24 857	N	
Minnesota		43 997	N	
Mississippi		937 552	N	
Missouri		2 891	N	
Montana		509 193	N	
New Hampshire		110 054	N	
New York		17 856	N	
North Carolina		571 646	N	
Ohio		5 406	N	
Oklahoma		129 014	N	
Oregon		2 418 176	N	
Pennsylvania		9 254	N	
South Carolina		532 022	N	
Tennessee		6 046	N	
Texas		424 550	N	
Utah		13 867	N	
Vermont		45 337	N	
Virginia		234 115	N	
Washington		1 610 913	N	
West Virginia	6 311	N		
Wisconsin	24 224	N		
Wyoming	73 182	N		
3211135	WOOD CHIPS, EXCEPT FIELD CHIPS			
	United States	2 589 475	2 596 693	
	Alabama	280 026	185 000	
	Arizona	2 440	4 231	
	Arkansas	153 271	150 697	
	California	65 124	111 408	
	Florida	105 579	50 468	
	Georgia	314 609	179 255	
	Idaho	46 566	69 872	
	Indiana	6 141	3 338	
	Kentucky	14 788	12 113	
	Louisiana	118 077	107 976	
	Maine	32 338	65 926	
	Maryland	3 748	3 690	
	Michigan	9 013	9 541	
	Minnesota	13 476	13 175	
	Mississippi	198 924	147 824	
	Missouri	3 164	2 617	
	Montana	37 627	62 039	
	New Hampshire	14 353	9 585	
	New York	7 605	9 142	
	North Carolina	174 805	99 519	

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	
3211135	WOOD CHIPS, EXCEPT FIELD CHIPS—Con.			
	Ohio	8 001	9 216	
	Oklahoma	37 488	N	
	Oregon	266 516	401 332	
	Pennsylvania	25 104	11 664	
	South Carolina	139 537	170 881	
	South Dakota	5 391	3 894	
	Tennessee	16 856	16 205	
	Texas	122 400	181 814	
	Vermont	3 441	3 871	
	Virginia	39 304	39 361	
	Washington	261 853	372 330	
	West Virginia	20 231	10 195	
	Wisconsin	26 459	23 283	
	Wyoming	2 957	2 975	
	3211137	WOOD TIES, SIDING, SHINGLES, AND SHAKES AND CONTRACT SAWING OF LOGS OWNED BY OTHERS		
		United States	237 443	N
Arkansas		20 101	N	
California		42 503	N	
Idaho		13 830	N	
Kentucky		5 083	N	
Louisiana		5 372	N	
Maine		3 010	N	
Minnesota		2 259	N	
Mississippi		4 347	N	
Missouri		5 391	N	
North Carolina		2 204	N	
Oregon		6 466	N	
Pennsylvania		6 671	N	
Tennessee		6 426	N	
Texas		5 958	N	
Virginia		11 340	N	
Washington		54 651	N	
Wisconsin		7 405	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)
321113	SAWMILLS				
11311000	Stumpage cost (cost of timber, excluding land, cut and consumed at same establishment)	X	2 155 225	X	N
11331015	Hardwood logs and bolts	S	1 395 866	N	N
11331017	Softwood logs and bolts	S	6 787 459	N	N
32100023	Hardwood rough lumber	252.3	157 804	N	N
32100029	Softwood rough lumber	412.9	151 734	N	N
32100027	Hardwood dressed lumber	S	21 214	N	N
32100033	Softwood dressed lumber	270.0	116 884	N	N
32552003	Glues and adhesives	S	13 770	N	N
00970099	All other materials and components, parts, containers, and supplies	X	593 614	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	3 365 827	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

321113 SAWMILLS

This U.S. industry comprises establishments primarily engaged in sawing dimension lumber, boards, beams, timbers, poles, ties, shingles, shakes, siding, and wood chips from logs or bolts. Sawmills may plane the rough lumber that they make with a planing machine to achieve smoothness and uniformity of size.

The data published with NAICS code 321113 include the following SIC industries:

- 2421 Sawmills and planing mills, general (pt)
- 2429 Special product sawmills, n.e.c. (pt)
- 2439 Structural wood members, n.e.c. (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 321113 include establishments primarily engaged in the manufacture of lumber members made from logs and bolts, but do not include establishments primarily engaged in the manufacture of hardwood dimension made from logs and bolts. 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
\$ 3211131111	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211131121	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211131131	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211131141	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211133111	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211133121	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211133131	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211133241	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211133351	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3211133461	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.

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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
3211131121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
3211131131.....	2421121.....	2421165 pt.....	3212117YVV.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
3211131141.....	2421125.....	2421177 pt.....	3212117YVW.....	2435300 pt.....	2435311.....	3212197YVV.....	2493600.....	2493600.....
3211131YVV.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
3211133111.....	2421241.....	2421212 pt.....	321211WYWW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
3211133121.....	2421244.....	2421213 pt.....	321211WYVW.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
3211133131.....	2421247.....	2421215 pt.....				3212198YVV.....	2493700.....	2493700.....
3211133241.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....	321219W.....	24930.....	24930.....
3211133351.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219WYWW.....	2493000.....	2493000.....
3211133461.....	2421257.....	2421237 pt.....				321219WYVW.....	2493002.....	2493002.....
3211133YVV.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....	3219111.....	24311.....	24311.....
			3212123111.....	2436501.....	2436501.....	3219111111.....	2431131.....	2431131.....
3211135.....	24215.....	24215.....	3212123221.....	2436505.....	2436505.....	3219111121.....	2431132.....	2431132.....
3211135111.....	2421516.....	2421516.....	3212123331.....	2436511.....	2436511.....	3219111231.....	2431135.....	2431135.....
3211135121.....	2421522.....	2421522.....	3212123441.....	2436521.....	2436521.....	3219111241.....	2431136.....	2431136.....
3211135231.....	2421518.....	2421518.....	3212123451.....	2436523.....	2436523.....	3219111351.....	2431142.....	2431141 pt.....
3211135241.....	2421524.....	2421524.....	3212123YVV.....	2436500.....	2436500.....	3219111361.....	2431143.....	2431141 pt.....
3211135YVV.....	2421500.....	2421500.....				3219111391 pt.....	2431191 pt.....	2431134.....
			3212125.....	24366.....	24366.....	3219111391 pt.....	2431191 pt.....	2431145.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111YVV.....	2431100.....	2431100.....
			3212125121.....	2436611.....	2436611.....			
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....			
			3212125141.....	2436615.....	2436615.....			
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	3219113.....	24312.....	24312.....
3211137111.....	2421817.....	2421817.....	3212125YVV.....	2436600.....	2436600.....	3219113111.....	2431209.....	2431209.....
3211137121.....	2421813.....	2421813.....				3219113121.....	2431215.....	2431215.....
3211137131 pt.....	2429011 pt.....	2429004.....	3212127.....	24367.....	24367.....	3219113YVV.....	2431200.....	2431200.....
3211137131 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....			
3211137131 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	3219115.....	24313.....	24313.....
3211137141.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVV pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVV.....	2431300.....	2431300.....
3211137YVV pt.....	2421900 pt.....	2421900 pt.....	3212127YVV.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			3212129111.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVV pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVV pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYVV pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYVV pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYVV pt.....	2439000 pt.....	2439000 pt.....	321212WYVV.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYVV pt.....	2439085.....	2439033 pt.....	321212WYVW.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYVV pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYVV pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYVV pt.....	2439002 pt.....	2439002 pt.....	3212130111.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			3212130221.....	2439015.....	2439031.....	3219117YVV.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
3211141111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
3211141121.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	3219119111.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVV.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
3211141131 pt.....	2491208 pt.....	2491207.....	3212130YVW.....	2439002 pt.....	2439002 pt.....	3219119131.....	2431585.....	2431585.....
3211141141.....	2491209.....	2491209.....				3219119141.....	2431587.....	2431587.....
3211141151.....	2491212.....	2491212.....	3212140.....	24390 pt.....	24390 pt.....	3219119151.....	2431588.....	2431597 pt.....
3211141161.....	2491214.....	2491214.....	3212140111 pt.....	2439061 pt.....	2439051 pt.....	3219119191 pt.....	2431591 pt.....	2431575.....
3211141171.....	2491216.....	2491216.....	3212140111 pt.....	2439061 pt.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431581.....
3211141YVV.....	2491200.....	2491200.....	3212140121.....	2439065.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431597 pt.....
			3212140131 pt.....	2439071 pt.....	2439051 pt.....	3219119YVV.....	2431500.....	2431500.....
3211145.....	24913.....	24913.....	3212140131 pt.....	2439071 pt.....	2439098 pt.....			
3211145111.....	2491302.....	2491302.....	3212140YVV.....	2439000 pt.....	2439000 pt.....	321911W.....	24310 pt.....	24310 pt.....
3211145121.....	2491305.....	2491305.....	3212140YVW.....	2439002 pt.....	2439002 pt.....	321911WYVV.....	2431000 pt.....	2431000 pt.....
3211145131.....	2491307.....	2491307.....				321911WYVW.....	2431002 pt.....	2431002 pt.....
3211145141.....	2491309.....	2491309.....	3212191.....	24931.....	24931.....			
3211145151.....	2491312.....	2491312.....	3212191111.....	2493111 pt.....	2493120.....	3219121.....	24211 pt.....	24211 pt.....
3211145161.....	2491314.....	2491314.....	3212191111 pt.....	2493111 pt.....	2493121 pt.....	321912111.....	2421135.....	2421161 pt.....
3211145171.....	2491317.....	2491317.....	3212191221 pt.....	2493115 pt.....	2493103.....	3219121121.....	2421141.....	2421163 pt.....
3211145191.....	2491321.....	2491321.....	3212191221 pt.....	2493115 pt.....	2493105.....	3219121131.....	2421145.....	2421165 pt.....
3211145YVV.....	2491300.....	2491300.....	3212191291.....	2493191.....	2493121 pt.....	3219121141.....	2421151.....	2421177 pt.....
			3212191YVV.....	2493100.....	2493100.....	3219121151 pt.....	2421155 pt.....	2421161 pt.....
3211149.....	24919.....	24919.....				3219121151 pt.....	2421155 pt.....	2421163 pt.....
3211149111.....	2491905.....	2491905.....	3212192.....	24932.....	24932.....	3219121151 pt.....	2421155 pt.....	2421165 pt.....
3211149121.....	2491907.....	2491907.....	3212192111.....	2493205.....	2493205.....	3219121151 pt.....	2421155 pt.....	2421175.....
3211149191.....	2491911.....	2491911.....	3212192121.....	2493207.....	2493207.....	3219121YVV.....	2421100 pt.....	2421100 pt.....
3211149YVV.....	2491900.....	2491900.....	3212192191 pt.....	2493291 pt.....	2493209.....			
			3212192191 pt.....	2493291 pt.....	2493221.....			
321114W.....	24910.....	24910.....	3212192YVV.....	2493200.....	2493200.....	3219123.....	24212 pt.....	24212 pt.....
321114WYVV.....	2491000.....	2491000.....				3219123111.....	2421264.....	2421212 pt.....
321114WYVW.....	2491002.....	2491002.....				3219123121.....	2421267.....	2421213 pt.....
			3212193.....	24933.....	24933.....	3219123131.....	2421271.....	2421215 pt.....
3212111.....	24354.....	24354.....	3212193111.....	2493311 pt.....	2493314 pt.....	3219123141.....	2421274.....	2421233 pt.....
3212111111.....	2435419.....	2435419.....	3212193111 pt.....	2493311 pt.....	2493316 pt.....	3219123151.....	2421277.....	2421235 pt.....
3212111221.....	2435415.....	2435415.....	3212193191 pt.....	2493391 pt.....	2493314 pt.....	3219123161.....	2421281.....	2421237 pt.....
3212111231.....	2435417.....	2435417.....	3212193191 pt.....	2493391 pt.....	2493316 pt.....	3219123171 pt.....	2421284 pt.....	2421212 pt.....
3212111241.....	2435421.....	2435421.....	3212193YVV.....	2493300.....	2493300.....	3219123171 pt.....	2421284 pt.....	2421213 pt.....
3212111251.....	2435427.....	2435427.....				3219123171 pt.....	2421284 pt.....	2421215 pt.....
3212111261.....	2435431.....	2435431.....				3219123171 pt.....	2421284 pt.....	2421231.....
3212111YVV.....	2435400.....	2435400.....	3212194.....	24934.....	24934.....	3219123YVV.....	2421200 pt.....	2421200 pt.....
			3212194111.....	2493412.....	2493412.....			
3212113.....	24351.....	24351.....	3212194121.....	2493414.....	2493414.....			
3212113111.....	2435101.....	2435101.....	3212194131.....	2493416.....	2493416.....	3219125.....	24262.....	24262.....
3212113221.....	2435105.....	2435105.....	3212194141.....	2493417.....	2493417.....	3219125111.....	2426231.....	2426224 pt.....
3212113231.....	2435107.....	2435107.....	3212194151.....	2493418.....	2493418.....	3219125115.....	2426241.....	2426224 pt.....
3212113291.....	2435147.....	2435147.....	3212194161.....	2493419.....	2493419.....	3219125221.....	2426233.....	2426251 pt.....
3212113YVV.....	2435100.....	2435100.....	3212194YVV.....	2493400.....	2493400.....	3219125225.....	2426243.....	2426251 pt.....
						3219125331.....	2426235.....	2426281 pt.....
3212115.....	24352.....	24352.....				3219125335.....	2426245.....	2426281 pt.....
3212115100.....	2435200.....	2435200.....	3212195.....	24935.....	24935.....	3219125441.....	2426283.....	2426283.....
			3212195100.....	2493500.....	2493500.....			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVW	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVW	2441100	2441100	3219925YVW	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
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3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVW	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
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3219129YVW pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
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321918WYVW pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVW pt	3999900 pt	3999900 pt
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321918WYVW pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVW pt	2429002 pt	2429002 pt
321918WYVW pt	2426002 pt	2426002 pt	3219923YVW	2452200	2452200	3219990YVW pt	2499002 pt	2499002 pt
						3219990YVW pt	3131002 pt	3131002 pt
						3219990YVW pt	3999002 pt	3999002 pt

Wood Preservation

1997

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1997 Economic Census

Manufacturing

Industry Series



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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)				
321114	Wood preservation	360	449	11 433	292 901	8 975	18 131	186 105	935 165	3 485 720	4 359 109	80 654
249100	Wood preserving	N	449	11 433	292 901	8 975	18 131	186 105	935 165	3 485 720	4 359 109	80 654

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)				
321114, WOOD PRESERVATION												
United States	1	449	194	11 433	292 901	8 975	18 131	186 105	935 165	3 485 720	4 359 109	80 654
Alabama	-	28	20	1 232	32 599	946	2 075	20 147	82 683	447 086	524 365	11 137
Arkansas	-	11	8	578	12 800	498	928	9 561	50 592	161 459	209 333	4 187
California	3	16	5	242	6 756	195	406	4 732	20 799	45 589	68 923	2 730
Florida	-	17	8	405	10 029	284	505	4 710	30 503	191 569	218 043	1 284
Georgia	1	20	8	483	13 574	315	609	6 221	34 375	196 952	227 036	7 122
Idaho	2	11	1	107	2 981	85	152	1 948	14 171	20 030	30 023	515
Illinois	-	9	5	202	5 711	165	352	4 327	19 335	45 555	62 097	713
Indiana	-	5	5	158	4 249	133	272	3 090	16 716	83 087	100 561	1 385
Kentucky	-	11	4	237	5 745	183	387	3 839	21 192	55 041	74 674	2 014
Louisiana	3	14	8	466	10 427	362	783	6 681	30 645	105 042	136 152	2 144
Maryland	2	7	2	113	2 762	92	178	1 975	15 615	58 920	71 057	706
Michigan	1	11	3	190	4 651	145	273	2 972	16 066	56 183	69 981	1 364
Minnesota	1	14	4	222	5 962	168	322	3 391	13 490	54 667	68 530	1 409
Mississippi	1	24	12	630	14 982	478	929	9 485	61 448	131 765	193 490	2 752
Missouri	2	15	2	165	3 930	136	249	2 839	13 231	38 401	52 214	1 335
North Carolina	1	31	11	579	12 843	441	892	8 384	47 131	194 549	236 757	2 028
Ohio	1	14	5	234	5 063	185	360	3 483	21 222	122 887	135 307	1 018
Oregon	-	10	8	321	10 996	236	505	7 073	33 195	89 058	120 495	6 972
Pennsylvania	-	19	8	306	8 004	246	482	5 205	34 672	151 319	184 479	2 530
South Carolina	-	15	6	801	20 821	638	1 376	13 386	58 779	207 601	261 379	6 316
Tennessee	3	10	5	389	6 324	329	644	4 647	20 593	86 366	101 281	3 678
Texas	-	22	9	621	14 692	525	1 052	10 900	47 169	149 776	197 485	3 399
Virginia	3	19	11	846	24 701	707	1 468	12 895	72 765	236 634	300 271	6 200
Washington	-	12	10	607	19 179	474	925	12 587	71 122	136 518	209 585	1 233
West Virginia	-	13	7	308	7 057	259	517	5 528	13 813	68 239	81 602	1 336
Wisconsin	-	9	6	278	8 086	229	441	4 810	18 503	102 092	118 822	1 173

* 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
321114, WOOD PRESERVATION		321114, WOOD PRESERVATION—Con.	
Companies ¹ number..	360	Value added \$1,000..	935 165
All establishments number..	449	Total inventories, beginning of year \$1,000..	544 523
Establishments with 1 to 19 employees number..	255	Finished goods inventories, beginning of year \$1,000..	356 031
Establishments with 20 to 99 employees number..	182	Work-in-process inventories, beginning of year \$1,000..	119 216
Establishments with 100 employees or more number..	12	Materials and supplies inventories, beginning of year \$1,000..	69 276
All employees number..	11 433	Total inventories, end of year \$1,000..	605 001
Total compensation ² \$1,000..	358 901	Finished goods inventories, end of year \$1,000..	404 515
Annual payroll \$1,000..	292 901	Work-in-process inventories, end of year \$1,000..	132 508
Total fringe benefits \$1,000..	66 000	Materials and supplies inventories, end of year \$1,000..	67 978
Production workers, average for year number..	8 975	Gross book value of total assets at beginning of year \$1,000..	800 331
Production workers on March 12 number..	8 880	Total capital expenditures (new and used) \$1,000..	80 654
Production workers on May 12 number..	9 200	Capital expenditures for buildings and other structures (new and used) \$1,000..	22 988
Production workers on August 12 number..	9 152	Capital expenditures for machinery and equipment (new and used) \$1,000..	57 666
Production workers on November 12 number..	8 668	Total retirements ² \$1,000..	25 749
Production-worker hours 1,000..	18 131	Gross book value of total assets at end of year \$1,000..	855 236
Production-worker wages \$1,000..	186 105	Total depreciation during year ² \$1,000..	54 769
Total cost of materials \$1,000..	3 485 720	Total rental payments ² \$1,000..	15 599
Cost of materials, parts, containers, etc., consumed \$1,000..	3 322 310	Buildings and other structures rental payments ² \$1,000..	4 804
Cost of resales \$1,000..	108 248	Machinery and equipment rental payments ² \$1,000..	10 795
Cost of fuels \$1,000..	19 925	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	2 613
Cost of purchased electricity \$1,000..	18 896	Response coverage ratio ⁴ percent..	73
Cost of contract work \$1,000..	16 341	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	19 588
Quantity of electricity purchased for heat and power 1,000 kWh..	332 467	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..	4 450
Total value of shipments \$1,000..	4 359 109	Response coverage ratio ⁴ percent..	73
Primary products value of shipments \$1,000..	4 020 151	Cost of purchased legal services ³ \$1,000..	2 967
Secondary products value of shipments \$1,000..	168 357	Response coverage ratio ⁴ percent..	73
Total miscellaneous receipts \$1,000..	170 601	Cost of purchased accounting and bookkeeping services ³ \$1,000..	2 771
Value of resales \$1,000..	125 475	Response coverage ratio ⁴ percent..	73
Contract receipts \$1,000..	23 920	Cost of purchased advertising services ³ \$1,000..	1 471
Other miscellaneous receipts \$1,000..	21 206	Response coverage ratio ⁴ percent..	73
Primary products specialization ratio percent..	95	Cost of purchased software and other data processing services ³ \$1,000..	1 047
Value of primary products shipments made in all industries \$1,000..	4 268 464	Response coverage ratio ⁴ percent..	73
Value of primary products shipments made in this industry \$1,000..	4 020 151	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	3 598
Value of primary products shipments made in other industries \$1,000..	248 313	Response coverage ratio ⁴ percent..	73
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)				
321114. WOOD PRESERVATION												
All establishments	1	449	194	11 433	292 901	8 975	18 131	186 105	935 165	3 485 720	4 359 109	80 654
Establishments with 1 to 4 employees	8	100	—	216	4 464	182	315	3 728	16 050	51 222	67 416	1 424
Establishments with 5 to 9 employees	5	81	—	575	14 048	440	766	8 771	44 373	137 579	181 705	3 590
Establishments with 10 to 19 employees	2	74	—	1 020	24 570	782	1 485	15 350	79 438	334 642	406 244	6 935
Establishments with 20 to 49 employees	—	130	130	4 101	113 594	3 076	6 283	67 674	327 452	1 474 680	1 775 300	32 733
Establishments with 50 to 99 employees	—	52	52	3 483	89 321	2 692	5 553	56 223	303 095	1 134 610	1 421 006	22 325
Establishments with 100 to 249 employees	—	9	9	1 210	26 993	1 039	2 101	19 382	102 917	217 876	313 723	5 403
Establishments with 250 to 499 employees	4	3	3	828	19 911	764	1 628	14 977	61 840	135 111	193 715	8 244
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	138	—	553	10 730	453	698	7 859	36 864	107 452	142 636	3 531

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)				
321114	Wood preservation	449	11 433	292 901	8 975	18 131	186 105	935 165	3 485 720	4 359 109	80 654
3211141	Wood poles, piles, and posts owned and treated by the same establishment	67	2 034	55 643	1 507	3 158	35 396	142 009	404 440	543 587	16 866
3211145	Other wood products owned and treated by the same establishment ..	177	7 472	188 695	5 926	12 022	117 541	648 000	2 757 011	3 354 013	49 719
3211149	Contract wood preservation	25	557	16 141	443	978	11 124	49 336	58 151	106 730	3 962

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)
321114	Wood preservation products	N	X	X	4 268 464	N	X	X	2 623 995
3211141	Wood poles, piles, and posts owned and treated by the same establishment	N	X	X	561 311	N	X	X	546 431
32111411	Wood poles, piles, and posts owned and treated by the same establishment	N	X	X	401 735	N	X	X	N
3211141111	Wood poles, piles, and posts owned and treated with pentachlorophenol by the same establishment, not more than 15 feet in length	6	X	1.4	11 719	11	X	N	31 311
3211141121	Wood poles, piles, and posts owned and treated with arsenical chemicals by the same establishment, not more than 15 feet in length	23	X	97.7	44 542	41	X	N	84 947
3211141131	Wood poles, piles, and posts owned and treated with other chemicals by the same establishment, not more than 15 feet in length	5	X	S	10 687	N	X	N	N
3211141141	Wood poles, piles, and posts owned and treated with pentachlorophenol by the same establishment, more than 15 feet in length	16	X	P16.5	151 086	25	X	N	169 196
3211141151	Wood poles, piles, and posts owned and treated with arsenical chemicals by the same establishment, more than 15 feet in length	27	X	12.3	86 616	35	X	N	70 771
3211141161	Wood poles, piles, and posts owned and treated with creosote by the same establishment, more than 15 feet in length	14	X	98.6	63 122	24	X	N	93 524
3211141171	Wood poles, piles, and posts owned and treated with other chemicals by the same establishment, more than 15 feet in length	5	X	S	33 963	7	X	N	32 052
3211141Y	Wood poles, piles, and posts owned and treated by the same establishment, nsk	N	X	X	159 576	N	X	X	N
3211141YWV	Wood poles, piles, and posts owned and treated by the same establishment, nsk	N	X	X	159 576	N	X	X	57 781
3211145	Other wood products owned and treated by the same establishment	N	X	X	3 230 020	N	X	X	1 746 942
32111451	Other wood products owned and treated by the same establishment	N	X	X	2 834 364	N	X	X	N
3211145111	Railway cross ties and mine ties (except switch or bridge) owned and treated by the same establishment	17	X	P433.3	223 225	17	X	N	168 296
3211145121	Rough and dressed lumber, not edge worked, owned and treated with fire-retardant, interior and exterior, by the same establishment	9	X	95.3	68 347	18	X	977.0	46 636
3211145131	Rough and dressed lumber, not edge worked, owned and treated with pentachlorophenol by the same establishment	8	X	9103.1	56 994	12	X	P166.5	63 251
3211145141	Rough and dressed lumber, not edge worked, owned and treated with arsenical chemicals by the same establishment	89	X	4 008.7	2 216 947	92	X	92 659.4	1 026 182
3211145151	Rough and dressed lumber, not edge worked, owned and treated with other chemicals by the same establishment	12	X	X	55 913	29	X	X	89 470
3211145161	Wood siding, flooring, and other edge worked lumber owned and treated by the same establishment	13	X	80.4	64 190	15	X	959.7	24 564
3211145171	Switch and bridge ties owned and treated by the same establishment	9	X	52.2	41 761	12	X	N	29 215
3211145191	Other wood products owned and treated by the same establishment, including plywood and sawn wood fence pickets, piling, and rails	33	X	X	106 987	38	X	X	99 167
3211145Y	Other wood products owned and treated by the same establishment, nsk	N	X	X	395 656	N	X	X	N
3211145YWV	Other wood products owned and treated by the same establishment, nsk	N	X	X	395 656	N	X	X	200 161
3211149	Contract wood preservation	N	X	X	124 373	N	X	X	127 735
32111491	Contract wood preservation	N	X	X	123 043	N	X	X	N
3211149111	Receipts for treating wood owned by others with arsenical chemicals	42	X	X	42 117	60	X	X	44 917
3211149121	Receipts for treating wood owned by others with creosote	7	X	X	64 423	12	X	X	42 118
3211149191	Receipts for treating wood owned by others with other chemicals, including fire-retardant and pentachlorophenol	16	X	X	16 503	20	X	X	27 092
3211149Y	Contract wood preservation, nsk	N	X	X	1 330	N	X	X	N
3211149YWV	Contract wood preservation, nsk	N	X	X	1 330	N	X	X	13 608

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)
321114	Wood preservation products— Con.								
321114W	Wood preservation products, nsk, total	N	X	X	352 760	N	X	X	202 887
321114WY	Wood preservation products, nsk, total	N	X	X	352 760	N	X	X	N
321114WYWW	Wood preservation products, nsk, for nonadministrative-record establishments	N	X	X	212 957	N	X	X	160 100
321114WYWY	Wood preservation products, nsk, for administrative-record establishments	N	X	X	139 803	N	X	X	42 787

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
3211141	WOOD POLES, PILES, AND POSTS OWNED AND TREATED BY THE SAME ESTABLISHMENT		
	United States	561 311	546 431
	Alabama	135 885	113 397
	Florida	20 597	15 716
	Georgia	63 039	48 882
	Idaho	21 445	17 120
	Kentucky	16 041	N
	Louisiana	14 348	N
	Mississippi	50 207	39 530
	Montana	4 932	4 382
	Oregon	32 045	24 575
	Pennsylvania	6 214	N
	South Carolina	43 091	28 665
	Virginia	20 363	14 610
	West Virginia	4 100	N
3211145	OTHER WOOD PRODUCTS OWNED AND TREATED BY THE SAME ESTABLISHMENT		
	United States	3 230 020	1 746 942
	Alabama	360 283	150 052
	Arkansas	146 820	82 562
	California	24 753	16 246
	Florida	158 489	62 645
	Georgia	170 094	90 625
	Illinois	43 786	43 850
	Indiana	124 217	39 815
	Kentucky	52 984	24 010
	Louisiana	94 863	20 869
	Michigan	49 543	15 082
	Minnesota	21 995	N
	Mississippi	101 424	50 420
	Missouri	33 864	30 787
	North Carolina	186 197	125 258
	Ohio	121 082	37 114
	Oregon	57 753	19 599
	Pennsylvania	188 325	95 902
	South Carolina	259 440	148 161
	Tennessee	70 369	33 156
	Texas	158 745	70 433
	Virginia	218 280	193 337
	Washington	171 012	109 088
	West Virginia	67 400	56 490
	Wisconsin	85 092	47 840

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
3211149	CONTRACT WOOD PRESERVATION		
	United States	124 373	127 735
	Arkansas	11 774	N
	California	12 226	13 476
	Michigan	5 160	2 284
	Oregon	14 726	13 487
	South Carolina	2 510	N
	Texas	15 552	9 321
	Washington	8 009	11 240

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)
321114	WOOD PRESERVATION				
11331013	Poles, piling, and other round or hewn wood products	X	258 552	X	216 252
32100023	Hardwood rough lumber	X	215 695	X	132 317
32100029	Softwood rough lumber	P1 424.3	619 893	S	362 937
32100021	Dressed lumber	3 119.8	1 422 435	P1 704.1	540 894
32519219	Creosote oil consumed in the same establishment	P41.7	36 215	946.7	38 335
32519203	Pentachlorophenol	X	23 636	X	23 985
32518801	Waterborne preservatives	94.2	100 940	S	77 952
00970099	All other materials and components, parts, containers, and supplies	X	71 366	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	573 578	X	311 859

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; 9 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

321114 WOOD PRESERVATION

This U.S. industry comprises establishments primarily engaged in (1) treating wood sawed, planed, or shaped in other establishments with creosote or other preservatives, such as chromated copper arsenate, to prevent decay and to protect against fire and insects and/or (2) sawing round wood poles, pilings, and posts and treating them with preservatives.

The data published with NAICS code 321114 include the following SIC industry:

2491 Wood preserving

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
3211131	24211 pt	24211 pt	3212117	24353	24353	3212197	24936	24936
321113111	2421111	2421161 pt	3212117111	2435331	2435331	3212197111	2493612	2493612
3211131121	2421115	2421163 pt	3212117291	2435398	2435398	3212197121	2493616	2493616
3211131131	2421121	2421165 pt	3212117YVV	2435300 pt	2435300	3212197131	2493617	2493617
3211131141	2421125	2421177 pt	3212117YVW	2435300 pt	2435311	3212197YVW	2493600	2493600
3211131YVV	2421100 pt	2421100 pt						
3211133	24212 pt	24212 pt	321211W	24350	24350	3212198	24937	24937
3211133111	2421241	2421212 pt	321211WYVW	2435000	2435000	3212198111	2493721	2493721
3211133121	2421244	2421213 pt	321211WYVY	2435002	2435002	3212198121	2493731	2493731
3211133131	2421247	2421215 pt				3212198YVW	2493700	2493700
3211133241	2421251	2421233 pt	3212121	24364	24364	321219W	24930	24930
3211133351	2421254	2421235 pt	3212121100	2436400	2436400	321219WYVW	2493000	2493000
3211133461	2421257	2421237 pt				321219WYVY	2493002	2493002
3211133YVW	2421200 pt	2421200 pt	3212123	24365	24365			
			3212123111	2436501	2436501	3219111	24311	24311
3211135	24215	24215	3212123221	2436505	2436505	3219111111	2431131	2431131
3211135111	2421516	2421516	3212123331	2436511	2436511	3219111121	2431132	2431132
3211135121	2421522	2421522	3212123441	2436521	2436521	3219111231	2431135	2431135
3211135231	2421518	2421518	3212123451	2436523	2436523	3219111241	2431136	2431136
3211135241	2421524	2421524	3212123YVW	2436500	2436500	3219111351	2431142	2431141 pt
3211135YVW	2421500	2421500				3219111361	2431143	2431141 pt
			3212125	24366	24366	3219111391 pt	2431191 pt	2431134
3211137 pt	24218 pt	24218 pt	3212125111	2436607	2436607	3219111391 pt	2431191 pt	2431145
			3212125121	2436611	2436611	3219111YVW	2431100	2431100
3211137 pt	24219 pt	24219 pt	3212125131	2436613	2436613			
			3212125141	2436615	2436615	3219113	24312	24312
3211137 pt	24290 pt	24290 pt	3212125151	2436617	2436617	3219113111	2431209	2431209
3211137111	2421817	2421817	3212125YVW	2436600	2436600	3219113121	2431215	2431215
3211137121	2421813	2421813				3219113YVW	2431200	2431200
3211137131 pt	2429011 pt	2429004	3212127	24367	24367			
3211137131 pt	2429011 pt	2429007	3212127111	2436703	2436703	3219115	24313	24313
3211137131 pt	2429011 pt	2429009	3212127121	2436721	2436721	3219115111	2431313	2431313
3211137141	2421911	2421911	3212127191 pt	2436727 pt	2436723	3219115121	2431315	2431315
3211137YVW pt	2421800 pt	2421800 pt	3212127191 pt	2436727 pt	2436725	3219115YVW	2431300	2431300
3211137YVW pt	2421900 pt	2421900 pt	3212127YVW	2436700	2436700			
						3219117	24314	24314
321113W pt	24210 pt	24210 pt	3212129	24363	24363	3219117111	2431411	2431411
			3212129111	2436331	2436331	3219117115	2431413	2431413
321113W pt	24290 pt	24290 pt	3212129191	2436398	2436398	3219117121	2431419	2431419
			3212129YVW pt	2436300 pt	2436300	3219117131	2431431	2431431
321113W pt	24390 pt	24390 pt	3212129YVW pt	2436300 pt	2436311	3219117135	2431433	2431433
321113WYVW pt	2421000 pt	2421000 pt				3219117141	2431435	2431435
321113WYVW pt	2429000 pt	2429000 pt	321212W	24360	24360	3219117145	2431437	2431437
321113WYVW pt	2439000 pt	2439000 pt	321212WYVW	2436000	2436000	3219117151	2431441	2431441
321113WYVW pt	2439085	2439033 pt	321212WYVY	2436002	2436002	3219117155	2431445	2431445
321113WYVW pt	2421002 pt	2421002 pt				3219117161 pt	2431449 pt	2431446
321113WYVW pt	2429002 pt	2429002 pt	3212130	24390 pt	24390 pt	3219117161 pt	2431449 pt	2431448
321113WYVW pt	2439002 pt	2439002 pt	3212130111	2439011	2439098 pt	3219117171	2431461	2431400 pt
			3212130221	2439015	2439031	3219117YVW	2431400	2431400 pt
3211141	24912	24912	3212130231	2439021	2439098 pt			
3211141111	2491201	2491201	3212130241 pt	2439025 pt	2439035	3219119	24315	24315
3211141121	2491203	2491203	3212130241 pt	2439025 pt	2439098 pt	3219119111	2431561	2431561
3211141131 pt	2491208 pt	2491205	3212130YVW	2439000 pt	2439000 pt	3219119121	2431584	2431584
3211141131 pt	2491208 pt	2491207	3212130YVY	2439002 pt	2439002 pt	3219119131	2431585	2431585
3211141141	2491209	2491209				3219119141	2431587	2431587
3211141151	2491212	2491212	3212140	24390 pt	24390 pt	3219119151	2431588	2431597 pt
3211141161	2491214	2491214	3212140111 pt	2439061 pt	2439051 pt	3219119191 pt	2431591 pt	2431575
3211141171	2491216	2491216	3212140111 pt	2439061 pt	2439098 pt	3219119191 pt	2431591 pt	2431581
3211141YVW	2491200	2491200	3212140121	2439065	2439098 pt	3219119191 pt	2431591 pt	2431597 pt
			3212140131 pt	2439071 pt	2439051 pt	3219119YVW	2431500	2431500
3211145	24913	24913	3212140131 pt	2439071 pt	2439098 pt			
3211145111	2491302	2491302	3212140YVW	2439000 pt	2439000 pt	321911W	24310 pt	24310 pt
3211145121	2491305	2491305	3212140YVY	2439002 pt	2439002 pt	321911WYVW	2431000 pt	2431000 pt
3211145131	2491307	2491307				321911WYVY	2431002 pt	2431002 pt
3211145141	2491309	2491309	3212191	24931	24931			
3211145151	2491312	2491312	3212191111	2493111 pt	2493120	3219121	24211 pt	24211 pt
3211145161	2491314	2491314	3212191111 pt	2493111 pt	2493121 pt	321912111	2421135	2421161 pt
3211145171	2491317	2491317	3212191221 pt	2493115 pt	2493103	3219121121	2421141	2421163 pt
3211145191	2491321	2491321	3212191221 pt	2493115 pt	2493105	3219121131	2421145	2421165 pt
3211145YVW	2491300	2491300	3212191291	2493191	2493121 pt	3219121141	2421151	2421177 pt
			3212191YVW	2493100	2493100	3219121151 pt	2421155 pt	2421161 pt
3211149	24919	24919				3219121151 pt	2421155 pt	2421163 pt
3211149111	2491905	2491905	3212192	24932	24932	3219121151 pt	2421155 pt	2421165 pt
3211149121	2491907	2491907	3212192111	2493205	2493205	3219121151 pt	2421155 pt	2421175
3211149191	2491911	2491911	3212192121	2493207	2493207	3219121YVW	2421100 pt	2421100 pt
3211149YVW	2491900	2491900	3212192191 pt	2493291 pt	2493209			
			3212192191 pt	2493291 pt	2493221	3219123	24212 pt	24212 pt
321114W	24910	24910	3212192YVW	2493200	2493200	3219123111	2421264	2421212 pt
321114WYVW	2491000	2491000				3219123121	2421267	2421213 pt
321114WYVY	2491002	2491002	3212193	24933	24933	3219123131	2421271	2421215 pt
			3212193111 pt	2493311 pt	2493314 pt	3219123141	2421274	2421233 pt
3212111	24354	24354	3212193111 pt	2493311 pt	2493316 pt	3219123151	2421277	2421235 pt
3212111111	2435419	2435419	3212193191 pt	2493391 pt	2493314 pt	3219123161	2421281	2421237 pt
3212111221	2435415	2435415	3212193191 pt	2493391 pt	2493316 pt	3219123171 pt	2421284 pt	2421212 pt
3212111231	2435417	2435417	3212193YVW	2493300	2493300	3219123171 pt	2421284 pt	2421213 pt
3212111241	2435421	2435421				3219123171 pt	2421284 pt	2421215 pt
3212111251	2435427	2435427	3212194	24934	24934	3219123171 pt	2421284 pt	2421231
3212111261	2435431	2435431	3212194111	2493412	2493412	3219123YVW	2421200 pt	2421200 pt
3212111YVW	2435400	2435400	3212194121	2493414	2493414			
			3212194131	2493416	2493416	3219125	24262	24262
3212113	24351	24351	3212194141	2493417	2493417	3219125111	2426231	2426224 pt
3212113111	2435101	2435101	3212194151	2493418	2493418	3219125115	2426241	2426224 pt
3212113221	2435105	2435105	3212194161	2493419	2493419	3219125221	2426233	2426251 pt
3212113231	2435107	2435107	3212194YVW	2493400	2493400	3219125225	2426243	2426251 pt
3212113291	2435147	2435147				3219125331	2426235	2426281 pt
3212113YVW	2435100	2435100	3212195	24935	24935	3219125335	2426245	2426281 pt
			3212195100	2493500	2493500	3219125441	2426283	2426283

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVV	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
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321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
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321918WYVV pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVV pt	3999900 pt	3999900 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVV pt	2421002 pt	2421002 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVV pt	2429002 pt	2429002 pt
321918WYVV pt	2426002 pt	2426002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499002 pt	2499002 pt
						3219990YVV pt	3131002 pt	3131002 pt
						3219990YVV pt	3999002 pt	3999002 pt

Hardwood Veneer and Plywood Manufacturing

1997

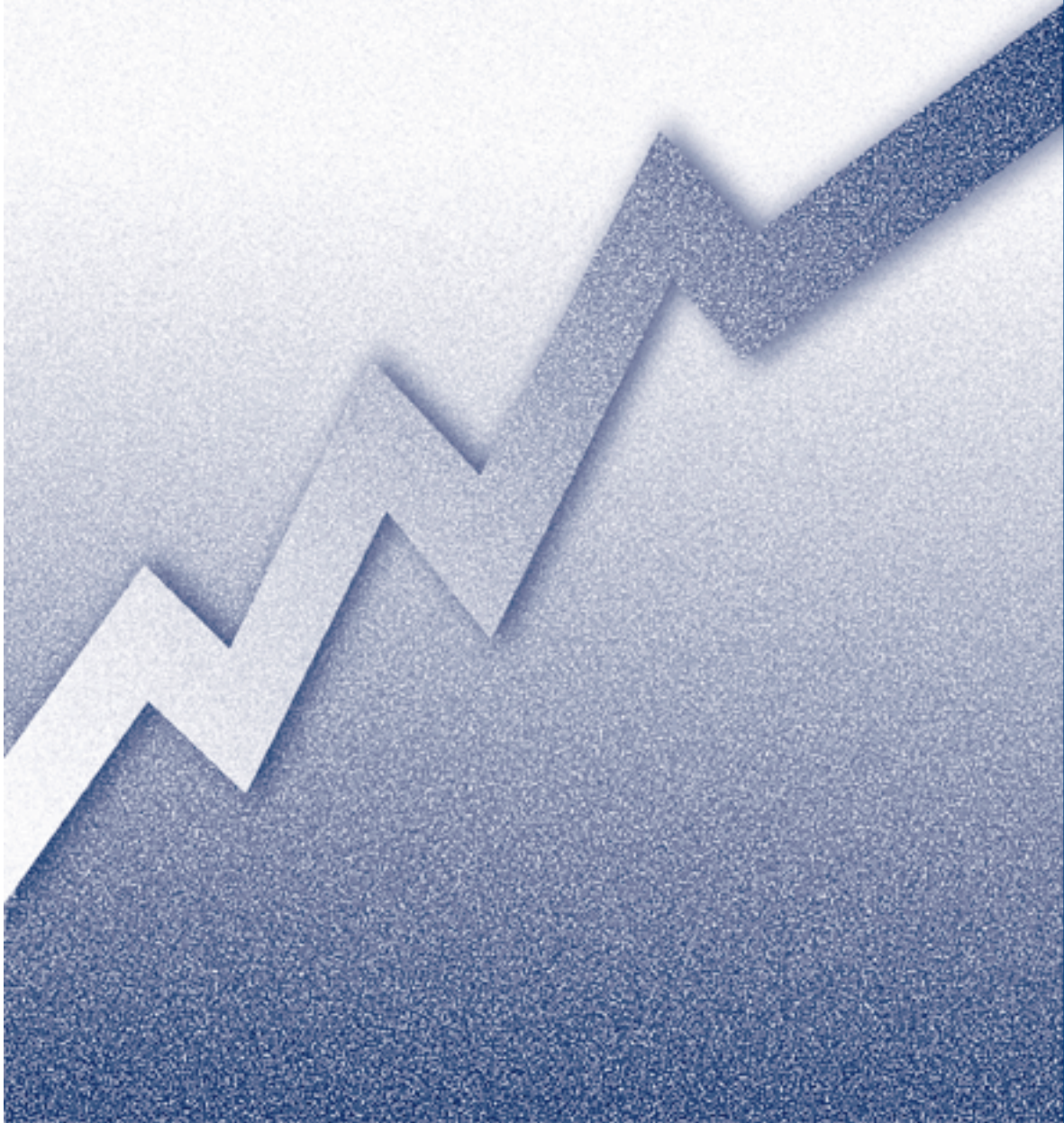
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1997 Economic Census

Manufacturing

Industry Series



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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 expenditures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
321211	Hardwood veneer & plywood mfg	304	332	22 025	523 723	19 186	39 417	387 187	1 108 010	1 755 698	2 856 487	71 682
243500	Hardwood veneer & plywood ..	N	332	22 025	523 723	19 186	39 417	387 187	1 108 010	1 755 698	2 856 487	71 682

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)				
321211, HARDWOOD VENEER & PLYWOOD MFG												
United States	1	332	208	22 025	523 723	19 186	39 417	387 187	1 108 010	1 755 698	2 856 487	71 682
Arkansas	1	10	8	518	10 401	447	843	8 041	26 894	70 929	98 049	1 138
Indiana	-	28	24	2 485	60 969	2 143	4 289	42 927	115 966	163 992	277 385	8 867
Mississippi	-	7	4	247	5 474	194	356	2 894	18 528	20 652	39 064	654
North Carolina	-	63	45	3 686	80 508	3 270	6 653	61 564	161 216	218 274	386 280	8 637
Oregon	2	12	9	1 834	56 583	1 586	3 497	40 059	119 765	287 388	404 362	7 033
South Carolina	1	17	12	1 057	18 548	940	1 780	13 686	44 895	53 969	98 114	2 538
Virginia	-	19	13	1 500	34 591	1 269	2 444	25 347	86 615	177 047	262 182	4 749
Washington	-	5	3	578	14 807	496	1 069	11 188	22 488	50 252	70 488	2 033
Wisconsin	-	23	14	1 949	41 253	1 737	3 466	31 050	83 933	104 939	184 615	5 919

* 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
321211, HARDWOOD VENEER & PLYWOOD MFG		321211, HARDWOOD VENEER & PLYWOOD MFG	
Companies ¹	304	— Con.	
All establishments	332	Value added	\$1,000.. 1 108 010
Establishments with 1 to 19 employees	124	Total inventories, beginning of year	\$1,000.. 396 021
Establishments with 20 to 99 employees	140	Finished goods inventories, beginning of year	\$1,000.. 159 037
Establishments with 100 employees or more	68	Work-in-process inventories, beginning of year	\$1,000.. 37 538
All employees	22 025	Materials and supplies inventories, beginning of year	\$1,000.. 199 446
Total compensation ²	645 851	Total inventories, end of year	\$1,000.. 428 326
Annual payroll	523 723	Finished goods inventories, end of year	\$1,000.. 163 457
Total fringe benefits	122 128	Work-in-process inventories, end of year	\$1,000.. 40 339
Production workers, average for year	19 186	Materials and supplies inventories, end of year	\$1,000.. 224 530
Production workers on March 15	19 022	Gross book value of total assets at beginning of year	\$1,000.. 881 741
Production workers on May 15	19 280	Total capital expenditures (new and used)	\$1,000.. 71 682
Production workers on August 15	19 296	Capital expenditures for buildings and other structures	
Production workers on November 15	19 146	(new and used)	\$1,000.. 11 706
Production-worker hours	39 417	Capital expenditures for machinery and equipment (new	
Production-worker wages	387 187	and used)	\$1,000.. 59 976
Total cost of materials	\$1,000.. 1 755 698	Total retirements ²	\$1,000.. 19 703
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 611 624	Gross book value of total assets at end of year	\$1,000.. 933 720
Cost of resales	\$1,000.. 80 749	Total depreciation during year ²	\$1,000.. 62 615
Cost of fuels	\$1,000.. 13 175	Total rental payments ²	\$1,000.. 14 339
Cost of purchased electricity	\$1,000.. 37 936	Buildings and other structures rental payments ²	\$1,000.. 6 919
Cost of contract work	\$1,000.. 12 214	Machinery and equipment rental payments ²	\$1,000.. 7 420
Quantity of electricity purchased for heat and power	1,000 kWh.. 699 156	Cost of purchased services for the repair of buildings and other	
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	structures ³	\$1,000.. 4 212
Total value of shipments	\$1,000.. 2 856 487	Response coverage ratio ⁴	percent.. 73
Primary products value of shipments	\$1,000.. 2 591 266	D Cost of purchased services for the repair of machinery and	
Secondary products value of shipments	\$1,000.. 134 172	equipment ³	\$1,000.. 22 016
Total miscellaneous receipts	\$1,000.. 131 049	Response coverage ratio ⁴	percent.. 73
Value of resales	\$1,000.. 91 288	Cost of purchased communications services ³	\$1,000.. 3 046
Contract receipts	\$1,000.. 23 784	Response coverage ratio ⁴	percent.. 73
Other miscellaneous receipts	\$1,000.. 15 977	Cost of purchased legal services ³	\$1,000.. 1 944
Primary products specialization ratio	percent.. 95	Response coverage ratio ⁴	percent.. 73
Value of primary products shipments made in all industries	\$1,000.. 2 741 394	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 076
Value of primary products shipments made in this industry	\$1,000.. 2 591 266	Response coverage ratio ⁴	percent.. 73
Value of primary products shipments made in other		Cost of purchased advertising services ³	\$1,000.. 1 534
industries	\$1,000.. 150 128	Response coverage ratio ⁴	percent.. 73
Coverage ratio	percent.. 94	Cost of purchased software and other data processing	
		services ³	\$1,000.. 858
		Response coverage ratio ⁴	percent.. 73
		Cost of purchased refuse removal (including hazardous waste)	
		services ³	\$1,000.. 2 986
		Response coverage ratio ⁴	percent.. 73

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)				
321211, HARDWOOD VENEER & PLYWOOD MFG												
All establishments	1	332	208	22 025	523 723	19 186	39 417	387 187	1 108 010	1 755 698	2 856 487	71 682
Establishments with 1 to 4 employees	9	56	—	123	2 246	116	197	2 165	4 195	6 293	10 751	376
Establishments with 5 to 9 employees	8	20	—	140	3 132	118	233	2 560	5 564	8 555	14 401	496
Establishments with 10 to 19 employees	6	48	—	686	15 193	597	1 139	11 708	29 398	44 440	74 943	2 205
Establishments with 20 to 49 employees	2	74	74	2 495	58 929	2 149	4 268	41 885	106 393	166 062	272 887	6 839
Establishments with 50 to 99 employees	1	66	66	4 547	96 859	3 993	8 045	72 230	204 189	285 390	486 352	12 313
Establishments with 100 to 249 employees	—	53	53	8 795	208 884	7 642	15 653	156 509	429 253	691 261	1 112 513	32 188
Establishments with 250 to 499 employees	1	14	14	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	104	—	909	18 750	811	1 449	15 329	32 271	53 537	87 617	3 022

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)				
321211	Hardwood veneer & plywood mfg	332	22 025	523 723	19 186	39 417	387 187	1 108 010	1 755 698	2 856 487	71 682
3212111	Hardwood veneer, including veneer backed with paper, cloth, or other flexible material	108	9 520	218 541	8 348	17 139	160 663	449 356	569 217	1 016 381	36 059
3212113	Hardwood plywood, except prefinished hardwood plywood made from purchased hardwood plywood ..	59	8 038	197 463	7 055	14 877	147 895	455 024	833 050	1 285 569	20 801
3212115	Prefinished hardwood plywood made from purchased hardwood plywood ..	6	460	12 566	327	612	6 451	36 555	122 770	155 375	1 775
3212117	Hardwood plywood type products	28	1 791	44 019	1 495	3 025	31 999	74 410	111 927	186 810	6 289

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)
321211	Hardwood veneer and plywood	N	X	X	2 741 394	N	X	X	2 023 278
3212111	Hardwood veneer, including veneer backed with paper, cloth, or other flexible material	N	X	X	939 407	N	X	X	605 974
321211111	Oak veneer, including veneer backed with paper, cloth, or other flexible material	N	X	X	301 239	N	X	X	N
3212111111	Oak veneer, including veneer backed with paper, cloth, or other flexible material mil sq ft sm..	64	X	S	301 239	54	S	P1 945.1	220 797
32121112	Hardwood veneer, except oak, including veneer backed with paper, cloth, or other flexible material	N	X	X	512 150	N	X	X	N
3212111221	Birch veneer, including veneer backed with paper, cloth, or other flexible material mil sq ft sm..	19	X	S	54 455	12	9513.4	9416.1	29 980
3212111231	Maple veneer, including veneer backed with paper, cloth, or other flexible material mil sq ft sm..	39	X	S	113 308	27	9447.8	439.4	39 493
3212111241	Walnut veneer, including veneer backed with paper, cloth, or other flexible material mil sq ft sm..	26	X	S	28 572	21	S	S	40 515
3212111251	Other domestic hardwood veneers, including veneers backed with paper, cloth, or other flexible material mil sq ft sm..	83	X	S	299 203	68	S	91 224.9	153 321
3212111261	Imported hardwood veneers, including veneers backed with paper, cloth, or other flexible material mil sq ft sm..	13	X	S	16 612	6	S	S	6 041
3212111Y	Hardwood veneer, including veneer backed with paper, cloth, or other flexible material, nsk	N	X	X	126 018	N	X	X	N
3212111YWV	Hardwood veneer, including veneer backed with paper, cloth, or other flexible material, nsk	N	X	X	126 018	N	X	X	115 827
3212113	Hardwood plywood, except prefinished hardwood plywood made from purchased hardwood plywood	N	X	X	1 219 392	N	X	X	678 467
32121131	Hardwood plywood, veneer core, except prefinished hardwood plywood made from purchased hardwood plywood	N	X	X	841 484	N	X	X	N
3212113111	Hardwood plywood, veneer core, except prefinished hardwood plywood made from purchased hardwood plywood mil sq ft sm..	46	X	S	841 484	47	X	822.7	454 300
32121132	Hardwood plywood, except veneer core and prefinished hardwood plywood made from purchased hardwood plywood	N	X	X	311 276	N	X	X	N
3212113221	Hardwood plywood, particleboard core, except prefinished hardwood plywood made from purchased hardwood plywood mil sq ft sm..	23	X	S	153 628	26	X	P101.7	87 198
3212113231	Hardwood plywood, medium density fiberboard (MDF) core, except prefinished hardwood plywood made from purchased hardwood plywood mil sq ft sm..	23	X	S	139 729	22	X	987.5	71 023
3212113291	Hardwood plywood, other core, including lumber, hardboard, oriented strandboard and waferboard, except prefinished hardwood plywood made from purchased hardwood plywood mil sq ft sm..	13	X	S	17 919	15	X	P13.9	30 009
3212113Y	Hardwood plywood, except prefinished hardwood plywood made from purchased hardwood plywood, nsk	N	X	X	66 632	N	X	X	N
3212113YWV	Hardwood plywood, except prefinished hardwood plywood made from purchased hardwood plywood, nsk	N	X	X	66 632	N	X	X	35 937
3212115	Prefinished hardwood plywood made from purchased hardwood plywood	N	X	X	145 357	N	X	X	178 358
32121151	Prefinished hardwood plywood made from purchased hardwood plywood	N	X	X	145 357	N	X	X	N
3212115100	Prefinished hardwood plywood made from purchased hardwood plywood mil sq ft sm..	22	X	S	145 357	13	X	738.1	178 358
3212117	Hardwood plywood type products	N	X	X	245 480	N	X	X	478 153
32121171	Hardwood veneered panels, including two-ply veneers	N	X	X	151 711	N	X	X	N
3212117111	Hardwood veneered panels, including two-ply veneers mil sq ft sm..	24	X	S	151 711	32	X	510.9	296 980
32121172	Other hardwood plywood type products, including cellular panels and curved and molded plywood	N	X	X	48 155	N	X	X	N
3212117291	Other hardwood plywood type products, including cellular panels and curved and molded plywood mil sq ft sm..	21	X	S	48 155	32	X	S	133 743
3212117Y	Hardwood plywood type products, nsk	N	X	X	45 614	N	X	X	N
3212117YWV	Hardwood plywood type products, nsk	N	X	X	45 614	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)
321211	Hardwood veneer and plywood —Con.								
321211W	Hardwood veneer and plywood, nsk, total	N	X	X	191 758	N	X	X	82 326
321211WY	Hardwood veneer and plywood, nsk, total	N	X	X	191 758	N	X	X	N
321211WYWW	Hardwood veneer and plywood, nsk, for nonadministrative-record establishments	N	X	X	106 338	N	X	X	61 274
321211WYWY	Hardwood veneer and plywood, nsk, for administrative-record establishments	N	X	X	85 420	N	X	X	21 052

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
3212111	HARDWOOD VENEER, INCLUDING VENEER BACKED WITH PAPER, CLOTH, OR OTHER FLEXIBLE MATERIAL		
	United States	939 407	605 974
	Alabama	44 734	33 910
	Georgia	22 486	30 345
	Indiana	144 248	104 036
	Kentucky	49 676	22 200
	Michigan	95 307	53 751
	North Carolina	113 413	80 138
	Pennsylvania	48 062	25 189
	South Carolina	20 303	10 042
	Virginia	54 069	34 680
	Wisconsin	96 376	78 609
3212113	HARDWOOD PLYWOOD, EXCEPT PREFINISHED HARDWOOD PLYWOOD MADE FROM PURCHASED HARDWOOD PLYWOOD		
	United States	1 219 392	678 467
	California	29 343	76 806
	Mississippi	23 690	N
	North Carolina	191 468	114 312
	Oregon	364 535	173 307
	South Carolina	69 241	N
	Virginia	127 744	84 813
	Wisconsin	58 564	35 355
3212115	PREFINISHED HARDWOOD PLYWOOD MADE FROM PURCHASED HARDWOOD PLYWOOD		
	United States	145 357	178 358
	Indiana	30 130	N
	North Carolina	4 527	4 888
3212117	HARDWOOD PLYWOOD TYPE PRODUCTS		
	United States	245 480	478 153
	Indiana	64 567	58 425
	North Carolina	17 082	64 291
	Oregon	42 173	121 311
	Wisconsin	5 710	23 526

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)
321211	HARDWOOD VENEER & PLYWOOD MFG				
11311000	Stumpage cost (cost of timber, excluding land, cut and consumed at same establishment).....	X	26 302	X	43 145
11331015	Hardwood logs and bolts..... mil bd ft Intl 1/4 in. scale..	S	307 440	N	183 229
11331017	Softwood logs and bolts mil bd ft Intl 1/4 in. scale..	S	42 344	N	54 810
32121105	Hardwood veneer mil sq ft sm..	S	442 298	2 583.3	351 179
32121203	Softwood veneer..... mil sq ft (1 in. basis)..	S	93 743	867.9	61 515
32121101	Hardwood plywood..... mil sq ft sm..	S	98 729	S	131 653
32121903	Particleboard (wood) mil sq ft (3/4 in. basis)..	P162.2	51 545	181.6	43 209
32121907	Medium density fiberboard (MDF) mil sq ft (3/4 in. basis)..	S	70 397	P109.5	34 872
32552003	Glues and adhesives	X	43 826	X	29 121
00970099	All other materials and components, parts, containers, and supplies	X	98 038	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	336 862	X	150 611

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; 1 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

321211 HARDWOOD VENEER AND PLYWOOD MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing hardwood veneer and/or hardwood plywood.

The data published with NAICS code 321211 include the following SIC industry:

2435 Hardwood veneer and plywood

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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
321113121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
321113131.....	2421121.....	2421165 pt.....	3212117YVW pt.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
321113141.....	2421125.....	2421177 pt.....	3212117YVW pt.....	2435300 pt.....	2435311.....	3212197YVW.....	2493600.....	2493600.....
3211131YVW.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
321113311.....	2421241.....	2421212 pt.....	321211WYVW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
321113312.....	2421244.....	2421213 pt.....	321211WYVW.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
321113313.....	2421247.....	2421215 pt.....				3212198YVW.....	2493700.....	2493700.....
321113324.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....	321219W.....	24930.....	24930.....
321113335.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219WYVW.....	2493000.....	2493000.....
321113346.....	2421257.....	2421237 pt.....				321219WYVW.....	2493002.....	2493002.....
3211133YVW.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....			
			321212311.....	2436501.....	2436501.....	3219111.....	24311.....	24311.....
3211135.....	24215.....	24215.....	321212321.....	2436505.....	2436505.....	3219111111.....	2431131.....	2431131.....
321113511.....	2421516.....	2421516.....	321212331.....	2436511.....	2436511.....	3219111121.....	2431132.....	2431132.....
321113512.....	2421522.....	2421522.....	321212344.....	2436521.....	2436521.....	3219111231.....	2431135.....	2431135.....
321113523.....	2421518.....	2421518.....	321212345.....	2436523.....	2436523.....	3219111241.....	2431136.....	2431136.....
321113524.....	2421524.....	2421524.....	3212123YVW.....	2436500.....	2436500.....	3219111351.....	2431142.....	2431141 pt.....
3211135YVW.....	2421500.....	2421500.....				3219111361.....	2431143.....	2431141 pt.....
			3212125.....	24366.....	24366.....	3219111391 pt.....	2431191 pt.....	2431134.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111391 pt.....	2431191 pt.....	2431145.....
			321212512.....	2436611.....	2436611.....	3219111YVW.....	2431100.....	2431100.....
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....			
			3212125141.....	2436615.....	2436615.....	3219113.....	24312.....	24312.....
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	321911311.....	2431209.....	2431209.....
321113711.....	2421817.....	2421817.....	3212125YVW.....	2436600.....	2436600.....	3219113121.....	2431215.....	2431215.....
321113712.....	2421813.....	2421813.....				3219113YVW.....	2431200.....	2431200.....
321113713 pt.....	2429011 pt.....	2429004.....	3212127.....	24367.....	24367.....			
321113713 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....	3219115.....	24313.....	24313.....
321113713 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	321911511.....	2431313.....	2431313.....
321113714.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVW pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVW.....	2431300.....	2431300.....
3211137YVW pt.....	2421900 pt.....	2421900 pt.....	3212127YVW.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			321212911.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVW pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVW pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYVW pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYVW pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYVW pt.....	2439000 pt.....	2439000 pt.....	321212WYVW.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYVW pt.....	2439085.....	2439033 pt.....	321212WYVW.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYVW pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYVW pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYVW pt.....	2439002 pt.....	2439002 pt.....	321213011.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			321213021.....	2439015.....	2439031.....	3219117YVW.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
321114111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
321114112.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	321911911.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVW.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
3211141131 pt.....	2491208 pt.....	2491207.....	3212130YVW.....	2439002 pt.....	2439002 pt.....	3219119131.....	2431585.....	2431585.....
3211141141.....	2491209.....	2491209.....				3219119141.....	2431587.....	2431587.....
3211141151.....	2491212.....	2491212.....	3212140.....	24390 pt.....	24390 pt.....	3219119151.....	2431588.....	2431597 pt.....
3211141161.....	2491214.....	2491214.....	3212140111 pt.....	2439061 pt.....	2439051 pt.....	3219119191 pt.....	2431591 pt.....	2431575.....
3211141171.....	2491216.....	2491216.....	3212140111 pt.....	2439061 pt.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431581.....
3211141YVW.....	2491200.....	2491200.....	3212140121.....	2439065.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431597 pt.....
			3212140131 pt.....	2439071 pt.....	2439051 pt.....	3219119YVW.....	2431500.....	2431500.....
3211145.....	24913.....	24913.....	3212140131 pt.....	2439071 pt.....	2439098 pt.....			
321114511.....	2491302.....	2491302.....	3212140YVW.....	2439000 pt.....	2439000 pt.....	321911W.....	24310 pt.....	24310 pt.....
321114512.....	2491305.....	2491305.....	3212140YVW.....	2439002 pt.....	2439002 pt.....	321911WYVW.....	2431000 pt.....	2431000 pt.....
321114513.....	2491307.....	2491307.....				321911WYVW.....	2431002 pt.....	2431002 pt.....
321114514.....	2491309.....	2491309.....	3212191.....	24931.....	24931.....			
321114515.....	2491312.....	2491312.....	3212191111.....	2493111 pt.....	2493120.....	3219121.....	24211 pt.....	24211 pt.....
321114516.....	2491314.....	2491314.....	3212191111 pt.....	2493111 pt.....	2493121 pt.....	321912111.....	2421135.....	2421161 pt.....
321114517.....	2491317.....	2491317.....	3212191221 pt.....	2493115 pt.....	2493103.....	3219121121.....	2421141.....	2421163 pt.....
321114519.....	2491321.....	2491321.....	3212191221 pt.....	2493115 pt.....	2493105.....	3219121131.....	2421145.....	2421165 pt.....
3211145YVW.....	2491300.....	2491300.....	3212191291.....	2493191.....	2493121 pt.....	3219121141.....	2421151.....	2421177 pt.....
			3212191YVW.....	2493100.....	2493100.....	3219121151 pt.....	2421155 pt.....	2421161 pt.....
3211149.....	24919.....	24919.....				3219121151 pt.....	2421155 pt.....	2421163 pt.....
321114911.....	2491905.....	2491905.....	3212192.....	24932.....	24932.....	3219121151 pt.....	2421155 pt.....	2421165 pt.....
321114912.....	2491907.....	2491907.....	321219211.....	2493205.....	2493205.....	3219121151 pt.....	2421155 pt.....	2421175.....
321114919.....	2491911.....	2491911.....	3212192121.....	2493207.....	2493207.....	3219121YVW.....	2421100 pt.....	2421100 pt.....
3211149YVW.....	2491900.....	2491900.....	3212192191 pt.....	2493291 pt.....	2493209.....			
			3212192191 pt.....	2493291 pt.....	2493221.....	3219123.....	24212 pt.....	24212 pt.....
321114W.....	24910.....	24910.....	3212192YVW.....	2493200.....	2493200.....	321912311.....	2421264.....	2421212 pt.....
321114WYVW.....	2491000.....	2491000.....				321912312.....	2421267.....	2421213 pt.....
321114WYVW.....	2491002.....	2491002.....	3212193.....	24933.....	24933.....	321912313.....	2421271.....	2421215 pt.....
			3212193111.....	2493311 pt.....	2493314 pt.....	321912314.....	2421274.....	2421233 pt.....
3212111.....	24354.....	24354.....	3212193111 pt.....	2493311 pt.....	2493316 pt.....	321912315.....	2421277.....	2421235 pt.....
3212111111.....	2435419.....	2435419.....	3212193191 pt.....	2493391 pt.....	2493314 pt.....	321912316.....	2421281.....	2421237 pt.....
3212111221.....	2435415.....	2435415.....	3212193191 pt.....	2493391 pt.....	2493316 pt.....	321912317 pt.....	2421284 pt.....	2421212 pt.....
3212111231.....	2435417.....	2435417.....	3212193YVW.....	2493300.....	2493300.....	3219123171 pt.....	2421284 pt.....	2421213 pt.....
3212111241.....	2435421.....	2435421.....				3219123171 pt.....	2421284 pt.....	2421215 pt.....
3212111251.....	2435427.....	2435427.....	3212194.....	24934.....	24934.....	3219123171 pt.....	2421284 pt.....	2421231.....
3212111261.....	2435431.....	2435431.....	3212194111.....	2493412.....	2493412.....	3219123YVW.....	2421200 pt.....	2421200 pt.....
3212111YVW.....	2435400.....	2435400.....	3212194121.....	2493414.....	2493414.....			
			3212194131.....	2493416.....	2493416.....	3219125.....	24262.....	24262.....
3212113.....	24351.....	24351.....	3212194141.....	2493417.....	2493417.....	321912511.....	2426231.....	2426224 pt.....
3212113111.....	2435101.....	2435101.....	3212194151.....	2493418.....	2493418.....	3219125115.....	2426241.....	2426224 pt.....
321211321.....	2435105.....	2435105.....	3212194161.....	2493419.....	2493419.....	321912521.....	2426233.....	2426251 pt.....
3212113231.....	2435107.....	2435107.....	3212194YVW.....	2493400.....	2493400.....	3219125225.....	2426243.....	2426251 pt.....
3212113291.....								

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVY	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVV pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVV pt	2439081	2439033 pt	3219207YVV pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVY pt	2421002 pt	2421002 pt	3219207YVV pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVY pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVY pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVY pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVV pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVV pt	2441000	2441000	3219990144	2499451	2499451
3219181YVV	2431600	2431600	321920WYVV pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVV pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVV pt	2449000 pt	2449000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVV pt	2499000 pt	2499000 pt	3219990157	2499462	2499462
3219183YVV	2431700	2431700	321920WYVY pt	2429002 pt	2429002 pt	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVY pt	2441002	2441002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVY pt	2448002	2448002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVY pt	2449002	2449002	3219990171	2499489	2499489
3219185121	2431825	2431825	321920WYVY pt	2499002 pt	2499002 pt	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911	24511	24511	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911111	2451111	2451111	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451113	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911121 pt	2451112 pt	2451115	3219990191 pt	2499492	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499498 pt
3219185YVV pt	2421800 pt	2421800 pt	3219911351	2451118	2451118	3219990191 pt	3131033	3131061 pt
3219185YVV pt	2431800	2431800	3219911YVV	2451100	2451100	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915	24512	24512	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915111	2451222	2451222	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915121	2451230	2451230	3219990191 pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	3219915YVV	2451200	2451200	3219990YVV pt	2421000 pt	2421000 pt
3219187241	2426131	2426131	321991W	24510	24510	3219990YVV pt	2421800 pt	2421800 pt
3219187251	2426141	2426141	321991WYVV	2451000	2451000	3219990YVV pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	321991WYVY	2451002	2451002	3219990YVV pt	2429000 pt	2429000 pt
3219187YVV	2426100	2426100	3219921	24521	24521	3219990YVV pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921111	2452173	2452173	3219990YVV pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921121	2452175	2452175	3219990YVV pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219921YVV	2452100	2452100	3219990YVV pt	3131000 pt	3131000 pt
321918WYVV pt	2421000 pt	2421000 pt	3219923	24522	24522	3219990YVV pt	3999000 pt	3999000 pt
321918WYVV pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVY pt	3999900 pt	3999900 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVY pt	2421002 pt	2421002 pt
321918WYVY pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVY pt	2429002 pt	2429002 pt
321918WYVY pt	2426002 pt	2426002 pt	3219923YVV	2452200	2452200	3219990YVY pt	2499002 pt	2499002 pt
						3219990YVY pt	3131002 pt	3131002 pt
						3219990YVY pt	3999002 pt	3999002 pt

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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)				
321212	Softwood veneer & plywood mfg	88	155	28 843	912 613	26 105	60 416	789 966	1 795 442	3 957 224	5 748 047	168 142
243600	Softwood veneer & plywood ...	N	155	28 843	912 613	26 105	60 416	789 966	1 795 442	3 957 224	5 748 047	168 142

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)				
321212, SOFTWOOD VENEER & PLYWOOD MFG												
United States	-	155	128	28 843	912 613	26 105	60 416	789 966	1 795 442	3 957 224	5 748 047	168 142
Alabama	-	8	8	1 717	55 471	1 554	3 821	47 709	116 876	262 198	376 453	9 368
Arkansas	-	7	6	2 395	79 780	2 226	5 371	71 692	147 012	339 959	483 781	29 001
Idaho	-	5	5	676	21 036	618	1 389	18 332	38 305	83 645	120 671	1 881
Louisiana	-	12	12	3 461	99 496	3 129	7 666	84 631	155 471	462 603	618 325	13 968
Mississippi	-	9	8	1 936	63 785	1 769	4 194	55 770	107 367	272 043	377 562	6 396
Oregon	1	44	39	7 135	223 959	6 391	14 024	193 223	493 367	1 047 406	1 542 573	49 773
Texas	-	8	8	3 075	95 164	2 716	6 815	79 380	142 707	361 628	502 168	12 237
Washington	-	17	14	1 899	60 239	1 704	3 618	52 256	95 942	282 329	382 361	7 309

* 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
321212, SOFTWOOD VENEER & PLYWOOD MFG		321212, SOFTWOOD VENEER & PLYWOOD MFG— Con.	
Companies ¹	number.. 88	Value added	\$1,000.. 1 795 442
All establishments	number.. 155	Total inventories, beginning of year	\$1,000.. 389 826
Establishments with 1 to 19 employees	number.. 27	Finished goods inventories, beginning of year	\$1,000.. 117 037
Establishments with 20 to 99 employees	number.. 37	Work-in-process inventories, beginning of year	\$1,000.. 80 038
Establishments with 100 employees or more	number.. 91	Materials and supplies inventories, beginning of year	\$1,000.. 192 751
All employees	number.. 28 843	Total inventories, end of year	\$1,000.. 413 415
Total compensation ²	\$1,000.. 1 170 377	Finished goods inventories, end of year	\$1,000.. 124 408
Annual payroll	\$1,000.. 912 613	Work-in-process inventories, end of year	\$1,000.. 77 286
Total fringe benefits	\$1,000.. 257 764	Materials and supplies inventories, end of year	\$1,000.. 211 721
Production workers, average for year	number.. 26 105	Gross book value of total assets at beginning of year	\$1,000.. 2 649 619
Production workers on March 15	number.. 26 326	Total capital expenditures (new and used)	\$1,000.. 168 142
Production workers on May 15	number.. 26 451	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 12 888
Production workers on August 15	number.. 25 938	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 155 254
Production workers on November 15	number.. 25 705	Total retirements ²	\$1,000.. 37 944
Production-worker hours	\$1,000.. 60 416	Gross book value of total assets at end of year	\$1,000.. 2 779 817
Production-worker wages	\$1,000.. 789 966	Total depreciation during year ²	\$1,000.. 132 754
Total cost of materials	\$1,000.. 3 957 224	Total rental payments ²	\$1,000.. 6 180
Cost of materials, parts, containers, etc., consumed	\$1,000.. 3 703 031	Buildings and other structures rental payments ²	\$1,000.. 2 299
Cost of resales	\$1,000.. 32 698	Machinery and equipment rental payments ²	\$1,000.. 3 881
Cost of fuels	\$1,000.. 42 044	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 4 787
Cost of purchased electricity	\$1,000.. 119 195	Response coverage ratio ⁴	percent.. 94
Cost of contract work	\$1,000.. 60 256	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 108 746
Quantity of electricity purchased for heat and power	1,000 kWh.. 2 778 452	Response coverage ratio ⁴	percent.. 94
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 3 534
Total value of shipments	\$1,000.. 5 748 047	Response coverage ratio ⁴	percent.. 94
Primary products value of shipments	\$1,000.. 4 867 708	Cost of purchased legal services ³	\$1,000.. 2 231
Secondary products value of shipments	\$1,000.. 635 223	Response coverage ratio ⁴	percent.. 94
Total miscellaneous receipts	\$1,000.. 245 116	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 654
Value of resales	\$1,000.. 41 103	Response coverage ratio ⁴	percent.. 94
Contract receipts	\$1,000.. 5 263	Cost of purchased advertising services ³	\$1,000.. 495
Other miscellaneous receipts	\$1,000.. 198 750	Response coverage ratio ⁴	percent.. 94
Primary products specialization ratio	percent.. 88	Cost of purchased software and other data processing services ³	\$1,000.. 998
Value of primary products shipments made in all industries	\$1,000.. 5 088 229	Response coverage ratio ⁴	percent.. 94
Value of primary products shipments made in this industry	\$1,000.. 4 867 708	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 1 570
Value of primary products shipments made in other industries	\$1,000.. 220 521	Response coverage ratio ⁴	percent.. 94
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)				
321212, SOFTWOOD VENEER & PLYWOOD MFG												
All establishments	-	155	128	28 843	912 613	26 105	60 416	789 966	1 795 442	3 957 224	5 748 047	168 142
Establishments with 1 to 4 employees	5	10	-	22	466	20	35	455	1 239	3 044	4 213	72
Establishments with 5 to 9 employees	9	9	-	69	2 142	62	131	1 934	5 051	8 871	14 016	384
Establishments with 10 to 19 employees	6	8	-	109	2 545	99	199	2 219	6 869	14 153	21 252	575
Establishments with 20 to 49 employees	1	19	19	604	15 195	535	1 082	11 922	28 676	86 598	114 339	1 511
Establishments with 50 to 99 employees	1	18	18	1 174	35 898	1 011	2 241	28 580	77 968	251 684	327 973	10 629
Establishments with 100 to 249 employees	-	37	37	6 370	201 729	5 767	13 574	175 461	353 001	923 928	1 277 971	35 564
Establishments with 250 to 499 employees	-	48	48	16 457	518 681	14 971	35 127	450 651	989 515	2 185 781	3 165 642	91 321
Establishments with 500 to 999 employees	1	6	6	4 038	135 957	3 640	8 027	118 744	333 123	483 165	822 641	28 086
Establishments with 1,000 to 2,499 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	22	-	158	3 990	142	289	3 525	10 017	18 902	29 126	770

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)				
321212	Softwood veneer & plywood mfg	155	28 843	912 613	26 105	60 416	789 966	1 795 442	3 957 224	5 748 047	168 142
3212121	Softwood veneer, including veneer backed with paper, cloth, or other flexible material	37	2 518	73 902	2 174	4 650	59 069	177 071	453 255	627 267	15 368
3212123	Softwood plywood, rough, including touch sanded, interior and exterior ..	74	20 920	663 884	18 988	45 109	578 901	1 278 237	2 868 375	4 135 203	122 225
3212125	Softwood plywood, sanded, interior and exterior	10	3 771	127 413	3 482	7 764	111 911	256 083	458 698	722 199	27 109
3212127	Softwood plywood specialties	6	1 142	35 248	1 021	2 039	30 389	61 880	135 154	198 922	2 082
3212129	Softwood plywood type products	4	138	3 276	118	200	2 265	4 421	5 740	10 120	500

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)
321212	Softwood veneer and plywood	N	X	X	5 088 229	N	X	X	4 777 611
3212121	Softwood veneer, including veneer backed with paper, cloth, or other flexible material	N	X	X	764 064	N	X	X	609 467
32121211	Softwood veneer, including veneer backed with paper, cloth, or other flexible material	N	X	X	764 064	N	X	X	N
3212121100	Softwood veneer, including veneer backed with paper, cloth, or other flexible material mil sq ft (1 in. basis) ..	58	X	91 609.1	764 064	64	S	92 731.5	609 467
3212123	Softwood plywood, rough, including touch sanded, interior and exterior	N	X	X	2 969 319	N	X	X	2 751 120
32121231	Interior softwood plywood, rough, including touch sanded, C - D exterior glue	N	X	X	1 411 433	N	X	X	N
3212123111	Interior softwood plywood, rough, including touch sanded, C - D exterior glue mil sq ft (3/8 in. basis) ..	26	X	6 802.4	1 411 433	29	X	8 977.5	1 673 290
32121232	Interior softwood plywood, rough, including touch sanded, underlayment exterior glue	N	X	X	669 793	N	X	X	N
3212123221	Interior softwood plywood, rough, including touch sanded, underlayment exterior glue mil sq ft (3/8 in. basis) ..	22	X	2 944.2	669 793	20	X	2 620.6	539 930
32121233	Other interior softwood plywood, rough, including touch sanded	N	X	X	223 408	N	X	X	N
3212123331	Other interior softwood plywood, rough, including touch sanded mil sq ft (3/8 in. basis) ..	14	X	P1 019.4	223 408	17	X	1 205.2	225 079
32121234	Exterior softwood plywood, rough, including touch sanded, C - C and C - C plugged	N	X	X	272 420	N	X	X	N
3212123441	Exterior softwood plywood, rough, including touch sanded, C - C mil sq ft (3/8 in. basis) ..	20	X	P907.2	217 402	14	X	310.3	68 600
3212123451	Exterior softwood plywood, rough, including touch sanded, C - C plugged mil sq ft (3/8 in. basis) ..	14	X	186.2	55 018	11	X	436.3	96 266
3212123Y	Softwood plywood, rough, including touch sanded, interior and exterior, nsk	N	X	X	392 265	N	X	X	N
3212123YVW	Softwood plywood, rough, including touch sanded, interior and exterior, nsk	N	X	X	392 265	N	X	X	147 955
3212125	Softwood plywood, sanded, interior and exterior	N	X	X	841 643	N	X	X	772 992
32121251	Softwood plywood, sanded, interior and exterior	N	X	X	774 949	N	X	X	N
3212125111	Interior softwood plywood, sanded mil sq ft (3/8 in. basis) ..	1	X	D	D	7	X	170.0	41 021
3212125121	Exterior softwood plywood, sanded, A - C mil sq ft (3/8 in. basis) ..	17	X	909.3	288 355	16	X	1 274.7	327 794
3212125131	Exterior softwood plywood, sanded, B - B plyform mil sq ft (3/8 in. basis) ..	16	X	274.0	77 299	9	X	329.0	72 737
3212125141	Exterior softwood plywood, sanded, B - C mil sq ft (3/8 in. basis) ..	17	X	1 157.0	293 568	20	X	1 006.0	224 449
3212125151	Other exterior softwood plywood, sanded mil sq ft (3/8 in. basis) ..	13	X	D	D	13	X	152.2	34 326
3212125Y	Softwood plywood, sanded, interior and exterior, nsk	N	X	X	66 694	N	X	X	N
3212125YVW	Softwood plywood, sanded, interior and exterior, nsk	N	X	X	66 694	N	X	X	72 665
3212127	Softwood plywood specialties	N	X	X	440 591	N	X	X	458 007
32121271	Softwood plywood specialties	N	X	X	435 560	N	X	X	N
3212127111	Softwood plywood siding mil sq ft (3/8 in. basis) ..	13	X	887.7	286 470	13	X	943.8	259 979
3212127121	Softwood plywood overlays mil sq ft (3/8 in. basis) ..	7	X	215.5	101 754	8	X	181.5	58 824
3212127191	Other softwood plywood specialties mil sq ft (3/8 in. basis) ..	10	X	129.1	47 336	N	X	N	N
3212127Y	Softwood plywood specialties, nsk	N	X	X	5 031	N	X	X	N
3212127YVW	Softwood plywood specialties, nsk	N	X	X	5 031	N	X	X	D

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)
321212	Softwood veneer and plywood— Con.								
3212129	Softwood plywood type products	N	X	X	8 034	N	X	X	132 599
32121291	Softwood plywood type products	N	X	X	4 571	N	X	X	N
321212911	Softwood veneered panels, including two-ply veneers	—	X	—	—	10	X	P452.2	106 281
3212129191	Other softwood plywood type products, including cellular panels, and curved and molded plywood	3	X	X	4 571	12	X	X	26 318
3212129Y	Softwood plywood type products, nsk	N	X	X	3 463	N	X	X	N
3212129YVW	Softwood plywood type products, nsk	N	X	X	3 463	N	X	X	N
321212W	Softwood veneer and plywood, nsk, total	N	X	X	64 578	N	X	X	53 426
321212WY	Softwood veneer and plywood, nsk, total	N	X	X	64 578	N	X	X	N
321212WYVW	Softwood veneer and plywood, nsk, for nonadministrative-record establishments	N	X	X	36 094	N	X	X	46 735
321212WYWY	Softwood veneer and plywood, nsk, for administrative-record establishments	N	X	X	28 484	N	X	X	6 691

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
3212121	SOFTWOOD VENEER, INCLUDING VENEER BACKED WITH PAPER, CLOTH, OR OTHER FLEXIBLE MATERIAL		
	United States	764 064	609 467
	Alabama	36 721	N
	Arkansas	12 627	N
	California	60 169	37 351
	Georgia	52 696	7 431
	Idaho	31 398	N
	Louisiana	33 950	N
	Mississippi	28 866	N
	North Carolina	11 255	N
	Oregon	392 057	439 823
	Texas	9 607	N
	Virginia	6 310	N
	Washington	80 165	24 772
3212123	SOFTWOOD PLYWOOD, ROUGH, INCLUDING TOUCH SANDED, INTERIOR AND EXTERIOR		
	United States	2 969 319	2 751 120
	Alabama	256 470	214 083
	Arkansas	297 382	268 479
	Louisiana	387 638	378 105
	Mississippi	244 971	N
	Oregon	616 010	576 749
	Texas	272 120	259 400
	Washington	163 429	147 952
3212125	SOFTWOOD PLYWOOD, SANDED, INTERIOR AND EXTERIOR		
	United States	841 643	772 992
	Arkansas	66 461	46 128
	Louisiana	112 658	90 975
	Oregon	297 617	284 948
	Washington	13 100	75 098
3212127	SOFTWOOD PLYWOOD SPECIALTIES		
	United States	440 591	458 007
	Oregon	115 987	149 050
	Washington	104 433	80 536

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
3212129	SOFTWOOD PLYWOOD TYPE PRODUCTS		
	United States	8 034	132 599

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)
321212	SOFTWOOD VENEER & PLYWOOD MFG				
11311000	Stumpage cost (cost of timber, excluding land, cut and consumed at same establishment)	X	346 854	X	440 456
11331015	Hardwood logs and bolts	S	64 617	N	26 595
11331017	Softwood logs and bolts	S	2 218 800	N	1 479 952
32121105	Hardwood veneer	S	27 355	^P 224.1	28 514
32121203	Softwood veneer	716.6	363 583	S	402 295
32552003	Glues and adhesives	X	210 105	X	197 326
00970099	All other materials and components, parts, containers, and supplies	X	267 362	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	204 355	X	94 117

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

321212 SOFTWOOD VENEER AND PLYWOOD MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing softwood veneer and/or softwood plywood.

The data published with NAICS code 321212 include the following SIC industry:

2436 Softwood veneer and plywood

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
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVW	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVW	2441100	2441100	3219925YVW	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVW	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVW	2441200	2441200	321992W	24520	24520
3219127YVW pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVW	2452000	2452000
3219127YVW pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVW	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVW	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVW pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVW pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVW pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVW pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVW pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVW pt	2439081	2439033 pt	3219207YVW pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVW pt	2499000 pt	2499000 pt	3219207YVW pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVW pt	2421002 pt	2421002 pt	3219207YVW pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVW pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVW pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVW pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVW pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVW pt	2441000	2441000	3219990144	2499451	2499451
3219181YVW	2431600	2431600	321920WYVW pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVW pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVW pt	2449000 pt	2449000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVW pt	2499000 pt	2499000 pt	3219990157	2499462	2499462
3219183YVW	2431700	2431700	321920WYVW pt	2429002 pt	2429002 pt	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVW pt	2441002	2441002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVW pt	2448002	2448002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVW pt	2449002	2449002	3219990171	2499489	2499489
3219185121	2431825	2431825	321920WYVW pt	2499002 pt	2499002 pt	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911	24511	24511	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911111	2451111	2451111	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451113	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911121 pt	2451112 pt	2451115	3219990191 pt	2499496 pt	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499498 pt
3219185YVW pt	2421800 pt	2421800 pt	3219911351	2451118	2451118	3219990191 pt	3131033	3131061 pt
3219185YVW pt	2431800	2431800	3219911YVW	2451100	2451100	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915	24512	24512	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915111	2451222	2451222	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915121	2451230	2451230	3219990191 pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	3219915YVW	2451200	2451200	3219990YVW pt	2421000 pt	2421000 pt
3219187241	2426131	2426131	321991W	24510	24510	3219990YVW pt	2421800 pt	2421800 pt
3219187251	2426141	2426141	321991WYVW	2451000	2451000	3219990YVW pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	321991WYVW	2451002	2451002	3219990YVW pt	2429000 pt	2429000 pt
3219187YVW	2426100	2426100	3219921	24521	24521	3219990YVW pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921111	2452173	2452173	3219990YVW pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921121	2452175	2452175	3219990YVW pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219921YVW	2452100	2452100	3219990YVW pt	3131000 pt	3131000 pt
321918WYVW pt	2421000 pt	2421000 pt	3219923	24522	24522	3219990YVW pt	3999000 pt	3999000 pt
321918WYVW pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVW pt	3999900 pt	3999900 pt
321918WYVW pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVW pt	2421002 pt	2421002 pt
321918WYVW pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVW pt	2429002 pt	2429002 pt
321918WYVW pt	2426002 pt	2426002 pt	3219923YVW	2452200	2452200	3219990YVW pt	2499002 pt	2499002 pt
						3219990YVW pt	3131002 pt	3131002 pt
						3219990YVW pt	3999002 pt	3999002 pt

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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)				
321213	Engineered wood member (except truss) mfg	32	53	5 372	154 564	4 469	9 701	118 939	475 055	974 548	1 431 123	53 742
243920	Structural wood members, n.e.c. (pt)	N	53	5 372	154 564	4 469	9 701	118 939	475 055	974 548	1 431 123	53 742

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)				
321213, ENGINEERED WOOD MEMBER (EXCEPT TRUSS) MFG												
United States	-	53	51	5 372	154 564	4 469	9 701	118 939	475 055	974 548	1 431 123	53 742
Louisiana	-	3	3	345	10 446	303	640	8 479	87 502	86 761	172 411	2 102
Oregon	-	15	15	1 559	47 251	1 397	3 092	39 234	174 171	452 729	619 581	9 726
Washington	-	3	3	156	3 473	124	268	2 723	8 474	18 340	26 810	537

* 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
321213, ENGINEERED WOOD MEMBER (EXCEPT TRUSS) MFG		321213, ENGINEERED WOOD MEMBER (EXCEPT TRUSS) MFG—Con.	
Companies ¹	number.. 32	Value added	\$1,000.. 475 055
All establishments	number.. 53	Total inventories, beginning of year	\$1,000.. 124 192
Establishments with 1 to 19 employees	number.. 2	Finished goods inventories, beginning of year	\$1,000.. 71 515
Establishments with 20 to 99 employees	number.. 36	Work-in-process inventories, beginning of year	\$1,000.. 11 166
Establishments with 100 employees or more	number.. 15	Materials and supplies inventories, beginning of year	\$1,000.. 41 511
All employees	number.. 5 372	Total inventories, end of year	\$1,000.. 158 227
Total compensation ²	\$1,000.. 197 980	Finished goods inventories, end of year	\$1,000.. 88 342
Annual payroll	\$1,000.. 154 564	Work-in-process inventories, end of year	\$1,000.. 12 819
Total fringe benefits	\$1,000.. 43 416	Materials and supplies inventories, end of year	\$1,000.. 57 066
Production workers, average for year	number.. 4 469	Gross book value of total assets at beginning of year	\$1,000.. 819 695
Production workers on March 15	number.. 4 326	Total capital expenditures (new and used)	\$1,000.. 53 742
Production workers on May 15	number.. 4 412	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 18 019
Production workers on August 15	number.. 4 571	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 35 723
Production workers on November 15	number.. 4 567	Total retirements ²	\$1,000.. 6 995
Production-worker hours	1,000.. 9 701	Gross book value of total assets at end of year	\$1,000.. 866 442
Production-worker wages	\$1,000.. 118 939	Total depreciation during year ²	\$1,000.. 61 568
Total cost of materials	\$1,000.. 974 548	Total rental payments ²	\$1,000.. 3 366
Cost of materials, parts, containers, etc., consumed	\$1,000.. 869 602	Buildings and other structures rental payments ²	\$1,000.. 1 368
Cost of resales	\$1,000.. 79 367	Machinery and equipment rental payments ²	\$1,000.. 1 998
Cost of fuels	\$1,000.. 4 227	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 1 327
Cost of purchased electricity	\$1,000.. 18 052	Response coverage ratio ⁴	percent.. 98
Cost of contract work	\$1,000.. 3 300	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 18 180
Quantity of electricity purchased for heat and power	1,000 kWh.. 390 998	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.. 1 361
Total value of shipments	\$1,000.. 1 431 123	Response coverage ratio ⁴	percent.. 98
Primary products value of shipments	\$1,000.. 1 274 242	Cost of purchased legal services ³	\$1,000.. 523
Secondary products value of shipments	\$1,000.. 53 219	Response coverage ratio ⁴	percent.. 98
Total miscellaneous receipts	\$1,000.. 103 662	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 227
Value of resales	\$1,000.. 90 501	Response coverage ratio ⁴	percent.. 98
Contract receipts	\$1,000.. D	Cost of purchased advertising services ³	\$1,000.. 378
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 98
Primary products specialization ratio	percent.. 95	Cost of purchased software and other data processing services ³	\$1,000.. 493
Value of primary products shipments made in all industries	\$1,000.. 1 326 062	Response coverage ratio ⁴	percent.. 98
Value of primary products shipments made in this industry	\$1,000.. 1 274 242	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 964
Value of primary products shipments made in other industries	\$1,000.. 51 820	Response coverage ratio ⁴	percent.. 98
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)				
321213, ENGINEERED WOOD MEMBER (EXCEPT TRUSS) MFG												
All establishments	-	53	51	5 372	154 564	4 469	9 701	118 939	475 055	974 548	1 431 123	53 742
Establishments with 1 to 4 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 5 to 9 employees	-	-	-	-	-	-	-	-	-	-	-	-
Establishments with 10 to 19 employees	-	2	-	D	D	D	D	D	D	D	D	D
Establishments with 20 to 49 employees	-	17	17	643	15 383	527	1 055	11 014	40 181	82 572	119 535	4 264
Establishments with 50 to 99 employees	-	19	19	1 381	39 729	1 148	2 594	29 533	105 264	327 822	428 170	3 770
Establishments with 100 to 249 employees	-	11	11	D	D	D	D	D	D	D	D	D
Establishments with 250 to 499 employees	-	4	4	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	-	-	-	-	-	-	-	-	-	-	-	-

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)				
321213	Engineered wood member (except truss) mfg	53	5 372	154 564	4 469	9 701	118 939	475 055	974 548	1 431 123	53 742

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)
321213	Engineered wood members (except trusses)	N	X	X	1 326 062	N	X	X	N
3212130	Engineered structural wood members, except trusses	N	X	X	1 326 062	N	X	X	N
32121301	Laminated veneer lumber	N	X	X	314 631	N	X	X	N
3212130111	Laminated veneer lumbermil cu ft..	6	X	20.3	314 631	N	X	N	N
32121302	Other engineered structural wood members, except trusses and laminated veneer lumber	N	X	X	1 011 431	N	X	X	N
3212130221	Glued laminated timber, beams mil bd ft..	29	X	326.4	333 364	61	X	S	271 024
3212130231	Wood I-joists, I-beamsmil lin ft..	8	X	520.9	515 751	N	X	N	N
3212130241	Other engineered structural wood membersmil cu ft..	9	X	S	162 316	N	X	N	N
3212130Y	Engineered structural wood member manufacturing (except truss), nsk, total	N	X	X	-	N	X	X	N
3212130YWW	Engineered structural wood member manufacturing (except truss), nsk, for nonadministrative-record establishments	N	X	X	-	N	X	X	N
3212130YWY	Engineered structural wood member manufacturing (except truss), nsk, for administrative-record establishments	N	X	X	-	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

[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)
321213	ENGINEERED WOOD MEMBER (EXCEPT TRUSS) MFG				
32100033	Softwood dressed lumber mil bd ft..	P364.1	186 789	N	N
32121901	Reconstituted wood products, including particleboard, oriented strandboard, medium density fiberboard, and hardboard	X	88 732	X	N
00970099	All other materials and components, parts, containers, and supplies	X	568 160	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	25 921	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

321213 ENGINEERED WOOD MEMBER (EXCEPT TRUSS) MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing fabricated or laminated wood arches and/or other fabricated or laminated wood structural members.

The data published with NAICS code 321213 include the following SIC industry:

2439 Structural wood members, n.e.c. (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
3211131	24211 pt	24211 pt	3212117	24353	24353	3212197	24936	24936
321113111	2421111	2421161 pt	3212117111	2435331	2435331	3212197111	2493612	2493612
321113121	2421115	2421163 pt	3212117291	2435398	2435398	3212197121	2493616	2493616
321113131	2421121	2421165 pt	3212117YVV	2435300 pt	2435300	3212197131	2493617	2493617
321113141	2421125	2421177 pt	3212117YVW	2435300 pt	2435311	3212197YVV	2493600	2493600
3211131YVW	2421100 pt	2421100 pt						
3211133	24212 pt	24212 pt	321211W	24350	24350	3212198	24937	24937
321113311	2421241	2421212 pt	321211WYVW	2435000	2435000	3212198111	2493721	2493721
321113321	2421244	2421213 pt	321211WYVY	2435002	2435002	3212198121	2493731	2493731
3211133131	2421247	2421215 pt				3212198YVW	2493700	2493700
3211133241	2421251	2421233 pt	3212121	24364	24364	321219W	24930	24930
3211133351	2421254	2421235 pt	3212121100	2436400	2436400	321219WYVW	2493000	2493000
3211133461	2421257	2421237 pt				321219WYVY	2493002	2493002
3211133YVW	2421200 pt	2421200 pt	3212123	24365	24365			
3211135	24215	24215	3212123111	2436501	2436501	3219111	24311	24311
3211135111	2421516	2421516	3212123221	2436505	2436505	3219111111	2431131	2431131
3211135121	2421522	2421522	3212123331	2436511	2436511	3219111121	2431132	2431132
3211135231	2421518	2421518	3212123441	2436521	2436521	3219111231	2431135	2431135
3211135241	2421524	2421524	3212123451	2436523	2436523	3219111241	2431136	2431136
3211135YVW	2421500	2421500	3212123YVW	2436500	2436500	3219111351	2431142	2431141 pt
						3219111361	2431143	2431141 pt
						3219111391 pt	2431191 pt	2431134
						3219111391 pt	2431191 pt	2431145
						3219111YVW	2431100	2431100
3211137 pt	24218 pt	24218 pt	3212125	24366	24366	3219113	24312	24312
3211137 pt	24219 pt	24219 pt	3212125111	2436607	2436607	3219113111	2431209	2431209
3211137 pt	24290 pt	24290 pt	3212125121	2436611	2436611	3219113121	2431215	2431215
3211137111	2421817	2421817	3212125131	2436613	2436613	3219113YVW	2431200	2431200
3211137121	2421813	2421813	3212125141	2436615	2436615			
3211137131 pt	2429011 pt	2429004	3212125151	2436617	2436617			
3211137131 pt	2429011 pt	2429007	3212125YVW	2436600	2436600			
3211137131 pt	2429011 pt	2429009						
3211137141	2421911	2421911	3212127	24367	24367			
3211137YVW pt	2421800 pt	2421800 pt	3212127111	2436703	2436703	3219115	24313	24313
3211137YVW pt	2421900 pt	2421900 pt	3212127121	2436721	2436721	321911511	2431313	2431313
			3212127191 pt	2436727 pt	2436723	3219115121	2431315	2431315
			3212127191 pt	2436727 pt	2436725	3219115YVW	2431300	2431300
			3212127YVW	2436700	2436700			
321113W pt	24210 pt	24210 pt						
321113W pt	24290 pt	24290 pt	3212129	24363	24363	3219117	24314	24314
321113W pt	24290 pt	24290 pt	3212129111	2436331	2436331	3219117111	2431411	2431411
321113W pt	24290 pt	24290 pt	3212129191	2436398	2436398	3219117115	2431413	2431413
321113W pt	24290 pt	24290 pt	3212129YVW pt	2436300 pt	2436300	3219117121	2431419	2431419
321113WYVW pt	2421000 pt	2421000 pt	3212129YVW pt	2436300 pt	2436311	3219117131	2431431	2431431
321113WYVW pt	2429000 pt	2429000 pt				3219117135	2431433	2431433
321113WYVW pt	2429000 pt	2429000 pt	321212W	24360	24360	3219117141	2431435	2431435
321113WYVW pt	2439085	2439033 pt	321212WYVW	2436000	2436000	3219117145	2431437	2431437
321113WYVW pt	2421002 pt	2421002 pt	321212WYVY	2436002	2436002	3219117151	2431441	2431441
321113WYVW pt	2429002 pt	2429002 pt				3219117155	2431445	2431445
321113WYVW pt	2439002 pt	2439002 pt	3212130	24390 pt	24390 pt	3219117161 pt	2431449 pt	2431446
			3212130111	2439011	2439098 pt	3219117161 pt	2431449 pt	2431448
			3212130221	2439015	2439031	3219117171	2431461	2431400 pt
			3212130231	2439021	2439098 pt	3219117YVW	2431400	2431400 pt
			3212130241 pt	2439025 pt	2439035			
			3212130241 pt	2439025 pt	2439098 pt	3219119	24315	24315
			3212130YVW	2439000 pt	2439000 pt	3219119111	2431561	2431561
			3212130YVY	2439002 pt	2439002 pt	3219119121	2431584	2431584
						3219119131	2431585	2431585
						3219119141	2431587	2431587
						3219119151	2431588	2431597 pt
						3219119191 pt	2431591 pt	2431575
						3219119191 pt	2431591 pt	2431581
						3219119191 pt	2431591 pt	2431597 pt
						3219119YVW	2431500	2431500
						321911W	24310 pt	24310 pt
						321911WYVW	2431000 pt	2431000 pt
						321911WYVY	2431002 pt	2431002 pt
						3219121	24211 pt	24211 pt
						321912111	2421135	2421161 pt
						3219121121	2421141	2421163 pt
						3219121221	2421145	2421165 pt
						3219121231	2421145	2421165 pt
						3219121241	2421151	2421177 pt
						3219121251 pt	2421155 pt	2421161 pt
						3219121251 pt	2421155 pt	2421163 pt
						3219121251 pt	2421155 pt	2421165 pt
						3219121251 pt	2421155 pt	2421175
						3219121YVW	2421100 pt	2421100 pt
						3219123	24212 pt	24212 pt
						3219123111	2421264	2421212 pt
						3219123121	2421267	2421213 pt
						3219123131	2421271	2421215 pt
						3219123141	2421274	2421233 pt
						3219123151	2421277	2421235 pt
						3219123161	2421281	2421237 pt
						3219123171 pt	2421284 pt	2421212 pt
						3219123171 pt	2421284 pt	2421213 pt
						3219123171 pt	2421284 pt	2421215 pt
						3219123171 pt	2421284 pt	2421231
						3219123YVW	2421200 pt	2421200 pt
						3219125	24262	24262
						3219125111	2426231	2426224 pt
						3219125115	2426241	2426224 pt
						3219125221	2426233	2426251 pt
						3219125225	2426243	2426251 pt
						3219125331	2426235	2426281 pt
						3219125335	2426245	2426281 pt
						3219125441	2426283	2426283

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVW	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVW	2441100	2441100	3219925YVW	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVW	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVW	2441200	2441200	321992W	24520	24520
3219127YVW pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVW	2452000	2452000
3219127YVW pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVW	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVW	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVW pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVW pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVW pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVW pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVW pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVW pt	2439081	2439033 pt	3219207YVW pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVW pt	2499000 pt	2499000 pt	3219207YVW pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVW pt	2421002 pt	2421002 pt	3219207YVW pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVW pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVW pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVW pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVW pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVW pt	2441000	2441000	3219990144	2499451	2499451
3219181YVW	2431600	2431600	321920WYVW pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVW pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVW pt	2449000 pt	2449000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVW pt	2499000 pt	2499000 pt	3219990157	2499462	2499462
3219183YVW	2431700	2431700	321920WYVW pt	2429002 pt	2429002 pt	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVW pt	2441002	2441002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVW pt	2448002	2448002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVW pt	2449002	2449002	3219990171	2499489	2499489
3219185121	2431825	2431825	321920WYVW pt	2499002 pt	2499002 pt	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911	24511	24511	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911111	2451111	2451111	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451113	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911121 pt	2451112 pt	2451115	3219990191 pt	2499496 pt	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499498 pt
3219185YVW pt	2421800 pt	2421800 pt	3219911351	2451118	2451118	3219990191 pt	3131033	3131061 pt
3219185YVW pt	2431800	2431800	3219911YVW	2451100	2451100	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915	24512	24512	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915111	2451222	2451222	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915121	2451230	2451230	3219990191 pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	3219915YVW	2451200	2451200	3219990YVW pt	2421000 pt	2421000 pt
3219187241	2426131	2426131	321991W	24510	24510	3219990YVW pt	2421800 pt	2421800 pt
3219187251	2426141	2426141	321991WYVW	2451000	2451000	3219990YVW pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	321991WYVW	2451002	2451002	3219990YVW pt	2429000 pt	2429000 pt
3219187YVW	2426100	2426100	3219921	24521	24521	3219990YVW pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921111	2452173	2452173	3219990YVW pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921121	2452175	2452175	3219990YVW pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219921YVW	2452100	2452100	3219990YVW pt	3131000 pt	3131000 pt
321918WYVW pt	2421000 pt	2421000 pt	3219923	24522	24522	3219990YVW pt	3999000 pt	3999000 pt
321918WYVW pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVW pt	3999900 pt	3999900 pt
321918WYVW pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVW pt	2421002 pt	2421002 pt
321918WYVW pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVW pt	2429002 pt	2429002 pt
321918WYVW pt	2426002 pt	2426002 pt	3219923YVW	2452200	2452200	3219990YVW pt	2499002 pt	2499002 pt
						3219990YVW pt	3131002 pt	3131002 pt
						3219990YVW pt	3999002 pt	3999002 pt

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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 expenditures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
321214 243930	Truss mfg	888	992	32 721	800 130	24 751	48 364	480 897	1 614 474	2 074 645	3 681 750	85 138
	Structural wood members, n.e.c. (pt)	N	992	32 721	800 130	24 751	48 364	480 897	1 614 474	2 074 645	3 681 750	85 138

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 expenditures (\$1,000)
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
321214, TRUSS MFG												
United States	2	992	482	32 721	800 130	24 751	48 364	480 897	1 614 474	2 074 645	3 681 750	85 138
Arizona	1	29	20	1 423	33 863	1 175	2 434	23 745	70 384	101 924	171 750	2 393
California	1	85	34	2 737	63 930	2 119	4 178	41 111	129 948	164 268	293 383	6 951
Colorado	1	27	12	844	21 975	665	1 338	13 130	41 384	60 043	101 402	3 592
Florida	3	102	69	4 010	92 333	3 064	6 048	55 277	172 773	229 234	402 447	8 714
Idaho	2	14	7	408	8 712	279	536	4 974	17 330	22 507	39 926	742
Illinois	2	22	15	1 148	31 928	892	1 680	20 884	65 591	78 608	144 037	3 589
Kansas	-	10	4	249	4 501	210	384	3 064	9 255	12 058	21 256	588
Kentucky	-	23	7	488	10 622	383	742	6 956	21 074	25 421	46 585	1 278
Maryland	-	10	7	496	12 871	368	823	7 382	24 282	29 081	53 469	854
Massachusetts	1	7	2	112	2 960	81	161	1 812	7 689	7 431	15 059	653
Michigan	2	32	19	1 598	45 799	1 171	2 185	24 184	106 405	106 925	211 046	5 029
Missouri	1	23	10	561	14 979	399	781	8 573	31 525	40 299	71 749	1 311
New York	3	20	9	378	9 694	275	541	5 987	20 373	26 783	47 215	987
Ohio	1	37	24	1 595	37 639	1 172	2 388	21 071	82 146	106 339	188 092	4 064
Oregon	1	30	13	686	18 724	528	1 050	11 916	36 148	43 185	79 431	1 431
Tennessee	2	26	7	615	15 546	472	989	8 491	35 994	41 639	77 408	2 590
Texas	2	36	21	1 710	41 045	1 374	2 716	24 489	77 579	123 859	199 040	3 526
Washington	2	48	23	1 156	27 555	808	1 518	16 002	57 463	53 975	111 366	1 917

* 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
321214, TRUSS MFG		321214, TRUSS MFG—Con.	
Companies ¹	number.. 888	Value added	\$1,000.. 1 614 474
All establishments	number.. 992	Total inventories, beginning of year	\$1,000.. 264 060
Establishments with 1 to 19 employees	number.. 510	Finished goods inventories, beginning of year	\$1,000.. 70 511
Establishments with 20 to 99 employees	number.. 420	Work-in-process inventories, beginning of year	\$1,000.. 15 869
Establishments with 100 employees or more	number.. 62	Materials and supplies inventories, beginning of year	\$1,000.. 177 680
All employees	number.. 32 721	Total inventories, end of year	\$1,000.. 286 836
Total compensation ²	\$1,000.. 962 002	Finished goods inventories, end of year	\$1,000.. 76 953
Annual payroll	\$1,000.. 800 130	Work-in-process inventories, end of year	\$1,000.. 16 796
Total fringe benefits	\$1,000.. 161 872	Materials and supplies inventories, end of year	\$1,000.. 193 087
Production workers, average for year	number.. 24 751	Gross book value of total assets at beginning of year	\$1,000.. 780 566
Production workers on March 15	number.. 23 193	Total capital expenditures (new and used)	\$1,000.. 85 138
Production workers on May 15	number.. 24 908	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 17 410
Production workers on August 15	number.. 25 872	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 67 728
Production workers on November 15	number.. 25 031	Total retirements ²	\$1,000.. 17 260
Production-worker hours	1,000.. 48 364	Gross book value of total assets at end of year	\$1,000.. 848 444
Production-worker wages	\$1,000.. 480 897	Total depreciation during year ²	\$1,000.. 72 818
Total cost of materials	\$1,000.. 2 074 645	Total rental payments ²	\$1,000.. 41 994
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 838 266	Buildings and other structures rental payments ²	\$1,000.. 23 004
Cost of resales	\$1,000.. 206 342	Machinery and equipment rental payments ²	\$1,000.. 18 990
Cost of fuels	\$1,000.. 7 310	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 574
Cost of purchased electricity	\$1,000.. 12 501	Response coverage ratio ⁴	percent.. 72
Cost of contract work	\$1,000.. 10 226	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 19 526
Quantity of electricity purchased for heat and power	1,000 kWh.. 206 532	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.. 10 323
Total value of shipments	\$1,000.. 3 681 750	Response coverage ratio ⁴	percent.. 72
Primary products value of shipments	\$1,000.. 3 306 868	Cost of purchased legal services ³	\$1,000.. 3 551
Secondary products value of shipments	\$1,000.. 111 477	Response coverage ratio ⁴	percent.. 72
Total miscellaneous receipts	\$1,000.. 263 405	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 4 712
Value of resales	\$1,000.. 259 606	Response coverage ratio ⁴	percent.. 72
Contract receipts	\$1,000.. 2 620	Cost of purchased advertising services ³	\$1,000.. 3 183
Other miscellaneous receipts	\$1,000.. 1 179	Response coverage ratio ⁴	percent.. 72
Primary products specialization ratio	percent.. 96	Cost of purchased software and other data processing services ³	\$1,000.. 2 588
Value of primary products shipments made in all industries	\$1,000.. 3 516 147	Response coverage ratio ⁴	percent.. 72
Value of primary products shipments made in this industry	\$1,000.. 3 306 868	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 4 300
Value of primary products shipments made in other industries	\$1,000.. 209 279	Response coverage ratio ⁴	percent.. 72
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)				
321214, TRUSS MFG												
All establishments	2	992	482	32 721	800 130	24 751	48 364	480 897	1 614 474	2 074 645	3 681 750	85 138
Establishments with 1 to 4 employees	8	147	—	383	7 374	306	510	5 231	15 138	21 051	36 202	975
Establishments with 5 to 9 employees	5	141	—	961	19 227	725	1 241	12 238	39 233	53 954	93 272	3 033
Establishments with 10 to 19 employees	2	222	—	3 147	68 751	2 364	4 388	41 889	138 905	172 739	311 179	10 141
Establishments with 20 to 49 employees	2	270	270	8 774	209 546	6 568	12 490	125 503	424 104	510 974	934 725	24 228
Establishments with 50 to 99 employees	1	150	150	10 466	262 570	8 038	16 317	162 261	546 777	657 564	1 202 476	24 812
Establishments with 100 to 249 employees	1	59	59	8 183	211 521	6 173	12 330	121 047	412 729	614 804	1 022 433	21 005
Establishments with 250 to 499 employees	3	3	3	807	21 141	577	1 088	12 728	37 588	43 559	81 463	944
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	191	—	912	17 713	718	1 125	11 543	34 727	46 887	81 700	2 377

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)				
321214	Truss mfg	992	32 721	800 130	24 751	48 364	480 897	1 614 474	2 074 645	3 681 750	85 138

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)
321214	Wood trusses	N	X	X	3 516 147	N	X	X	N
3212140	Wood trusses	N	X	X	3 516 147	N	X	X	N
32121401	Wood trusses	N	X	X	2 655 921	N	X	X	N
3212140111	Wood roof trusses, metal plate connected	544	X	X	2 278 072	N	X	X	N
3212140121	Wood floor trusses, metal plate connected	241	X	X	366 860	N	X	X	N
3212140131	Other wood trusses	12	X	X	10 989	N	X	X	N
3212140Y	Wood truss manufacturing, nsk, total	N	X	X	860 226	N	X	X	N
3212140YWW	Wood truss manufacturing, nsk, for nonadministrative-record establishments	N	X	X	782 990	N	X	X	N
3212140YWY	Wood truss manufacturing, nsk, for administrative-record establishments	N	X	X	77 236	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

[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)
321214	TRUSS MFG				
32100023	Hardwood rough lumber	X	117 004	X	N
32100029	Softwood rough lumber	S	217 210	N	N
32100027	Hardwood dressed lumber	S	65 043	N	N
32100033	Softwood dressed lumber	P1 526.2	660 420	N	N
32121901	Reconstituted wood products, including particleboard, oriented strandboard, medium density fiberboard, and hardboard	X	12 868	X	N
33231201	Fabricated structural iron, steel, and aluminum including truss plates	X	82 466	X	N
00970099	All other materials and components, parts, containers, and supplies	X	68 056	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	615 199	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

321214 TRUSS MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing laminated or fabricated wood roof and floor trusses.

The data published with NAICS code 321214 include the following SIC industry:

2439 Structural wood members, n.e.c. (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
3211131	24211 pt	24211 pt	3212117	24353	24353	3212197	24936	24936
321113111	2421111	2421161 pt	3212117111	2435331	2435331	3212197111	2493612	2493612
3211131121	2421115	2421163 pt	3212117291	2435398	2435398	3212197121	2493616	2493616
3211131131	2421121	2421165 pt	3212117YVV pt	2435300 pt	2435300	3212197131	2493617	2493617
3211131141	2421125	2421177 pt	3212117YVV pt	2435300 pt	2435311	3212197YVV	2493600	2493600
3211131YVV	2421100 pt	2421100 pt						
3211133	24212 pt	24212 pt	321211W	24350	24350	3212198	24937	24937
321113311	2421241	2421212 pt	321211WYWW	2435000	2435000	3212198111	2493721	2493721
3211133121	2421244	2421213 pt	321211WYVY	2435002	2435002	3212198121	2493731	2493731
3211133131	2421247	2421215 pt				3212198YVV	2493700	2493700
3211133241	2421251	2421233 pt	3212121	24364	24364	321219W	24930	24930
3211133351	2421254	2421235 pt	3212121100	2436400	2436400	321219WYWW	2493000	2493000
3211133461	2421257	2421237 pt				321219WYVY	2493002	2493002
3211133YVV	2421200 pt	2421200 pt	3212123	24365	24365			
			3212123111	2436501	2436501	3219111	24311	24311
3211135	24215	24215	3212123221	2436505	2436505	3219111111	2431131	2431131
3211135111	2421516	2421516	3212123331	2436511	2436511	3219111121	2431132	2431132
3211135121	2421522	2421522	3212123441	2436521	2436521	3219111231	2431135	2431135
3211135231	2421518	2421518	3212123451	2436523	2436523	3219111241	2431136	2431136
3211135241	2421524	2421524	3212123YVV	2436500	2436500	3219111351	2431142	2431141 pt
3211135YVV	2421500	2421500				3219111361	2431143	2431141 pt
			3212125	24366	24366	3219111391 pt	2431191 pt	2431134
3211137 pt	24218 pt	24218 pt	3212125111	2436607	2436607	3219111391 pt	2431191 pt	2431145
			3212125121	2436611	2436611	3219111YVV	2431100	2431100
3211137 pt	24219 pt	24219 pt	3212125131	2436613	2436613			
3211137 pt	24290 pt	24290 pt	3212125141	2436615	2436615	3219113	24312	24312
3211137111	2421817	2421817	3212125151	2436617	2436617	3219113111	2431209	2431209
32111371121	2421813	2421813	3212125YVV	2436600	2436600	3219113121	2431215	2431215
3211137131 pt	2429011 pt	2429004				3219113YVV	2431200	2431200
3211137131 pt	2429011 pt	2429007	3212127	24367	24367			
3211137131 pt	2429011 pt	2429009	3212127111	2436703	2436703	3219115	24313	24313
3211137141	2421911	2421911	3212127121	2436721	2436721	3219115111	2431313	2431313
3211137YVV pt	2421800 pt	2421800 pt	3212127191 pt	2436727 pt	2436727 pt	3219115121	2431315	2431315
3211137YVV pt	2421900 pt	2421900 pt	3212127191 pt	2436727 pt	2436725	3219115YVV	2431300	2431300
			3212127YVV	2436700	2436700			
321113W pt	24210 pt	24210 pt	3212129	24363	24363	3219117	24314	24314
			3212129111	2436331	2436331	3219117111	2431411	2431411
321113W pt	24290 pt	24290 pt	3212129191	2436398	2436398	3219117115	2431413	2431413
			3212129YVV pt	2436300 pt	2436300	3219117121	2431419	2431419
321113W pt	24390 pt	24390 pt	3212129YVV pt	2436300 pt	2436311	3219117131	2431431	2431431
321113WYVV pt	2421000 pt	2421000 pt				3219117135	2431433	2431433
321113WYVV pt	2429000 pt	2429000 pt	321212W	24360	24360	3219117141	2431435	2431435
321113WYVV pt	2439000 pt	2439000 pt	321212WYVV	2436000	2436000	3219117145	2431437	2431437
321113WYVV pt	2439085	2439033 pt	321212WYVY	2436002	2436002	3219117151	2431441	2431441
321113WYVV pt	2421002 pt	2421002 pt				3219117155	2431445	2431445
321113WYVY pt	2429002 pt	2429002 pt	3212130	24390 pt	24390 pt	3219117161 pt	2431449 pt	2431446
321113WYVY pt	2439002 pt	2439002 pt	3212130111	2439011	2439098 pt	3219117161 pt	2431449 pt	2431448
			3212130221	2439015	2439031	3219117171	2431461	2431400 pt
3211141	24912	24912	3212130231	2439021	2439098 pt	3219117YVV	2431400	2431400 pt
3211141111	2491201	2491201	3212130241 pt	2439025 pt	2439035			
3211141121	2491203	2491203	3212130241 pt	2439025 pt	2439098 pt	3219119	24315	24315
3211141131 pt	2491208 pt	2491205	3212130YVV	2439000 pt	2439000 pt	3219119111	2431561	2431561
3211141131 pt	2491208 pt	2491207	3212130YVY	2439002 pt	2439002 pt	3219119121	2431584	2431584
3211141141	2491209	2491209				3219119131	2431585	2431585
3211141151	2491212	2491212	3212140	24390 pt	24390 pt	3219119141	2431587	2431587
3211141161	2491214	2491214	3212140111 pt	2439061 pt	2439051 pt	3219119151	2431588	2431597 pt
3211141171	2491216	2491216	3212140111 pt	2439061 pt	2439098 pt	3219119191 pt	2431591 pt	2431575
3211141YVV	2491200	2491200	3212140121	2439065	2439098 pt	3219119191 pt	2431591 pt	2431581
			3212140131 pt	2439071 pt	2439051 pt	3219119191 pt	2431591 pt	2431597 pt
3211145	24913	24913	3212140131 pt	2439071 pt	2439098 pt	3219119YVV	2431500	2431500
3211145111	2491302	2491302	3212140YVV	2439000 pt	2439000 pt			
3211145121	2491305	2491305	3212140YVY	2439002 pt	2439002 pt	321911W	24310 pt	24310 pt
3211145131	2491307	2491307				321911WYVV	2431000 pt	2431000 pt
3211145141	2491309	2491309	3212191	24931	24931	321911WYVY	2431002 pt	2431002 pt
3211145151	2491312	2491312	3212191111	2493111 pt	2493120			
3211145161	2491314	2491314	3212191111 pt	2493111 pt	2493121 pt	3219121	24211 pt	24211 pt
3211145171	2491317	2491317	3212191221 pt	2493115 pt	2493103	3219121111	2421135	2421161 pt
3211145191	2491321	2491321	3212191221 pt	2493115 pt	2493105	3219121121	2421144	2421163 pt
3211145YVV	2491300	2491300	3212191291	2493191	2493121 pt	3219121131	2421145	2421165 pt
			3212191YVV	2493100	2493100	3219121141	2421151	2421177 pt
3211149	24919	24919				3219121151 pt	2421155 pt	2421161 pt
3211149111	2491905	2491905	3212192	24932	24932	3219121151 pt	2421155 pt	2421163 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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						3219990YVW pt	3999002 pt	3999002 pt

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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 expenditures (\$1,000)
				Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)				
321219	Reconstituted wood product mfg	213	317	25 304	798 767	20 607	45 046	596 391	2 318 116	2 984 089	5 278 809	329 744
249300	Reconstituted wood products ..	N	317	25 304	798 767	20 607	45 046	596 391	2 318 116	2 984 089	5 278 809	329 744

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 expenditures (\$1,000)	
	E ¹	Total	With 20 em-ploy-ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)					Wages (\$1,000)
321219, RECONSTITUTED WOOD PRODUCT MFG												
United States	-	317	200	25 304	798 767	20 607	45 046	596 391	2 318 116	2 984 089	5 278 809	329 744
Alabama	-	8	5	710	18 700	582	1 360	14 248	56 729	89 716	145 656	15 845
Arkansas	-	5	3	452	13 883	338	737	10 077	36 883	65 767	103 107	4 082
California	-	23	16	1 534	51 586	1 307	2 878	38 873	149 871	188 810	336 567	11 270
Georgia	-	12	10	1 243	38 780	995	2 167	28 156	107 951	175 243	284 889	22 732
Illinois	-	13	7	782	19 882	633	1 228	13 482	49 954	72 366	122 248	5 129
Louisiana	-	7	6	1 001	29 268	860	2 057	23 309	97 184	111 803	207 565	11 753
Maine	-	4	4	479	15 522	384	889	11 890	25 075	54 713	78 836	2 201
Michigan	-	17	11	1 323	49 183	1 067	2 192	35 092	136 988	186 056	322 030	27 363
Minnesota	-	12	9	1 266	47 148	1 062	2 275	37 812	93 552	152 088	245 151	16 633
Mississippi	-	10	8	1 812	50 849	1 505	3 428	38 660	228 813	183 755	409 975	25 190
New York	-	4	3	198	5 645	146	284	3 722	14 889	22 575	36 731	3 161
North Carolina	-	22	19	2 260	65 843	1 795	4 014	46 582	232 582	207 880	434 184	32 863
Ohio	-	7	3	488	13 366	269	575	6 862	44 174	78 535	121 406	2 537
Oklahoma	5	4	2	154	4 615	141	315	4 173	6 996	13 118	20 661	999
Oregon	-	28	24	2 662	97 624	2 213	4 778	72 273	279 090	382 548	663 302	29 593
Pennsylvania	-	16	6	1 335	43 489	1 135	2 361	34 951	136 009	109 327	244 292	11 874
South Carolina	-	8	7	948	28 427	746	1 632	20 749	91 853	102 801	194 915	3 526
Texas	-	19	11	1 357	41 179	1 072	2 623	31 045	103 562	181 435	278 666	28 929
Virginia	-	12	10	1 341	42 693	1 108	2 459	33 210	113 035	156 642	268 839	42 777
Washington	-	9	4	425	12 171	351	729	9 143	37 083	57 991	94 194	4 209
Wisconsin	-	12	9	1 120	35 043	920	1 892	26 552	88 769	124 571	214 085	9 185

* 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
321219, RECONSTITUTED WOOD PRODUCT MFG		321219, RECONSTITUTED WOOD PRODUCT MFG	
— Con.		— Con.	
Companies ¹	number.. 213	Value added	\$1,000.. 2 318 116
All establishments	number.. 317	Total inventories, beginning of year	\$1,000.. 427 716
Establishments with 1 to 19 employees	number.. 117	Finished goods inventories, beginning of year	\$1,000.. 153 941
Establishments with 20 to 99 employees	number.. 95	Work-in-process inventories, beginning of year	\$1,000.. 32 652
Establishments with 100 employees or more	number.. 105	Materials and supplies inventories, beginning of year	\$1,000.. 241 123
All employees	number.. 25 304	Total inventories, end of year	\$1,000.. 460 242
Total compensation ²	\$1,000.. 1 027 732	Finished goods inventories, end of year	\$1,000.. 178 920
Annual payroll	\$1,000.. 798 767	Work-in-process inventories, end of year	\$1,000.. 31 069
Total fringe benefits	\$1,000.. 228 965	Materials and supplies inventories, end of year	\$1,000.. 250 253
Production workers, average for year	number.. 20 607	Gross book value of total assets at beginning of year	\$1,000.. 5 507 501
Production workers on March 15	number.. 20 557	Total capital expenditures (new and used)	\$1,000.. 329 744
Production workers on May 15	number.. 20 740	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 30 594
Production workers on August 15	number.. 20 783	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 299 150
Production workers on November 15	number.. 20 348	Total retirements ²	\$1,000.. 68 343
Production-worker hours	\$1,000.. 45 046	Gross book value of total assets at end of year	\$1,000.. 5 768 902
Production-worker wages	\$1,000.. 596 391	Total depreciation during year ²	\$1,000.. 308 605
Total cost of materials	\$1,000.. 2 984 089	Total rental payments ²	\$1,000.. 17 021
Cost of materials, parts, containers, etc., consumed	\$1,000.. 2 545 770	Buildings and other structures rental payments ²	\$1,000.. 6 259
Cost of resales	\$1,000.. 65 230	Machinery and equipment rental payments ²	\$1,000.. 10 762
Cost of fuels	\$1,000.. 111 014	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 9 218
Cost of purchased electricity	\$1,000.. 239 936	Response coverage ratio ⁴	percent.. 98
Cost of contract work	\$1,000.. 22 139	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 125 607
Quantity of electricity purchased for heat and power	1,000 kWh.. 5 532 918	Response coverage ratio ⁴	percent.. 98
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 4 907
Total value of shipments	\$1,000.. 5 278 809	Response coverage ratio ⁴	percent.. 98
Primary products value of shipments	\$1,000.. 5 061 057	Cost of purchased legal services ³	\$1,000.. 2 398
Secondary products value of shipments	\$1,000.. 117 323	Response coverage ratio ⁴	percent.. 98
Total miscellaneous receipts	\$1,000.. 100 429	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 362
Value of resales	\$1,000.. 79 864	Response coverage ratio ⁴	percent.. 98
Contract receipts	\$1,000.. 9 458	Cost of purchased advertising services ³	\$1,000.. 4 112
Other miscellaneous receipts	\$1,000.. 11 107	Response coverage ratio ⁴	percent.. 98
Primary products specialization ratio	percent.. 97	Cost of purchased software and other data processing services ³	\$1,000.. 1 921
Value of primary products shipments made in all industries	\$1,000.. 5 167 770	Response coverage ratio ⁴	percent.. 98
Value of primary products shipments made in this industry	\$1,000.. 5 061 057	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 8 439
Value of primary products shipments made in other industries	\$1,000.. 106 713	Response coverage ratio ⁴	percent.. 98
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)				
321219, RECONSTITUTED WOOD PRODUCT MFG												
All establishments	-	317	200	25 304	798 767	20 607	45 046	596 391	2 318 116	2 984 089	5 278 809	329 744
Establishments with 1 to 4 employees	9	49	-	109	2 613	89	172	2 135	9 050	8 929	18 212	1 089
Establishments with 5 to 9 employees	6	35	-	255	7 228	190	360	4 700	23 579	27 060	51 282	3 737
Establishments with 10 to 19 employees	6	33	-	453	12 805	358	658	8 576	40 847	45 403	86 776	4 395
Establishments with 20 to 49 employees	-	42	42	1 368	36 971	1 080	2 059	25 068	105 432	174 358	282 194	10 806
Establishments with 50 to 99 employees	-	53	53	3 805	117 845	3 084	6 588	83 121	380 329	461 926	836 043	31 419
Establishments with 100 to 249 employees	-	93	93	14 181	462 672	11 535	25 921	349 045	1 203 912	1 805 208	3 000 887	237 699
Establishments with 250 to 499 employees	-	10	10	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	87	-	548	13 421	443	768	10 320	48 316	47 658	97 251	6 226

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)				
321219	Reconstituted wood product mfg	317	25 304	798 767	20 607	45 046	596 391	2 318 116	2 984 089	5 278 809	329 744
3212191	Particleboard made from particleboard produced at this location	41	5 737	191 557	4 635	10 339	140 826	588 499	671 906	1 260 963	92 698
3212192	Waferboard and oriented strandboard	36	5 279	179 211	4 370	10 248	142 121	401 857	853 456	1 248 495	131 888
3212193	Medium density fiberboard (MDF) made from MDF produced at this location	18	2 366	76 624	1 976	4 447	58 315	195 052	278 413	474 256	22 059
3212194	Hardboard made from hardboard produced at this location	25	5 030	159 831	4 186	9 173	125 261	632 164	375 894	993 264	35 799
3212195	Cellulosic fiberboard (insulating board)	8	814	26 755	669	1 454	20 341	70 425	64 103	132 845	5 045
3212197	Hardboard made from purchased hardboard	22	1 236	35 522	866	1 828	21 625	95 770	151 233	244 892	5 550
3212198	Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF ..	60	3 780	99 595	3 069	6 040	67 884	235 543	479 509	714 284	27 757

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)
321219	Reconstituted wood products	N	X	X	5 167 770	N	X	X	3 987 115
3212191	Particleboard made from particleboard produced at this location	N	X	X	1 263 554	N	X	X	948 492
32121911	Particleboard, industrial, including commercial and shelving, made from particleboard produced at this location	N	X	X	1 040 834	N	X	X	N
321219111	Particleboard, industrial, including commercial and shelving, made from particleboard produced at this locationmil sq ft (3/4 in. basis) ..	20	X	X	3 723.0	1 040 834	N	X	N
32121912	Other particleboard, including underlayment, manufactured (mobile) home decking, stepping, siding, sheathing, and door core, made from particleboard produced at this location	N	X	X	161 936	N	X	X	N
3212191221	Particleboard, flooring, including underlayment and manufactured (mobile) home decking, made from particleboard produced at this locationmil sq ft (3/4 in. basis) ..	9	X	X	399.8	108 043	N	X	N
3212191291	Other particleboard, including stepping, siding, sheathing, and door core, made from particleboard produced at this locationmil sq ft (3/4 in. basis) ..	7	X	X	140.8	53 893	N	X	N
3212191Y	Particleboard made from particleboard produced at this location, nsk	N	X	X	60 784	N	X	X	N
3212191YVV	Particleboard made from particleboard produced at this location, nsk	N	X	X	60 784	N	X	X	50 557
3212192	Waferboard and oriented strandboard	N	X	X	1 249 636	N	X	X	1 131 599
32121921	Waferboard and oriented strandboard	N	X	X	1 208 794	N	X	X	N
3212192111	Waferboard and oriented strandboard sheathingmil sq ft (3/8 in. basis) ..	13	X	X	6 882.1	796 045	9	X	4 183.4
3212192121	Waferboard and oriented strandboard underlaymentmil sq ft (3/8 in. basis) ..	8	X	X	1 155.4	146 499	7	X	579.5
3212192191	Other waferboard and oriented strandboardmil sq ft (3/8 in. basis) ..	8	X	X	2 011.4	266 250	N	X	N
3212192Y	Waferboard and oriented strandboard, nsk	N	X	X	40 842	N	X	X	N
3212192YVV	Waferboard and oriented strandboard, nsk	N	X	X	40 842	N	X	X	-
3212193	Medium density fiberboard (MDF) made from MDF produced at this location	N	X	X	454 349	N	X	X	383 429
32121931	Medium density fiberboard (MDF) made from MDF produced at this location	N	X	X	431 795	N	X	X	N
3212193111	Industrial medium density fiberboard (MDF) made from MDF produced at this locationmil sq ft (3/4 in. basis) ..	10	X	X	884.9	301 860	N	X	N
3212193191	Other medium density fiberboard (MDF) made from MDF produced at this locationmil sq ft (3/4 in. basis) ..	6	X	X	349.0	129 935	N	X	N
3212193Y	Medium density fiberboard (MDF) made from MDF produced at this location, nsk	N	X	X	22 554	N	X	X	N
3212193YVV	Medium density fiberboard (MDF) made from MDF produced at this location, nsk	N	X	X	22 554	N	X	X	7 418
3212194	Hardboard made from hardboard produced at this location	N	X	X	945 403	N	X	X	683 397
32121941	Hardboard made from hardboard produced at this location	N	X	X	931 258	N	X	X	N
3212194111	Standard hardboard (not machined or coated) made from hardboard produced at this locationmil sq ft (1/8 in. basis) ..	4	X	D	D	D	5	X	1 267.6
3212194121	Service, tempered, and other basic hardboard (not machined or coated) made from hardboard produced at this locationmil sq ft (1/8 in. basis) ..	4	X	S	64 870	D	3	X	D
3212194131	Machined and cut hardboard, including molded, cut to size, perforated, and panel stock, not coated, made from hardboard produced at this locationmil sq ft (1/8 in. basis) ..	2	X	D	D	D	3	X	D
3212194141	Coated or laminated hardboard interior paneling made from hardboard produced at this locationmil sq ft (1/8 in. basis) ..	2	X	D	D	D	4	X	176.8
3212194151	Coated or laminated hardboard siding made from hardboard produced at this locationmil sq ft (1/8 in. basis) ..	6	X	X	2 561.1	352 483	5	X	S
									301 650

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)
321219	Reconstituted wood products—Con.								
3212194	Hardboard made from hardboard produced at this location—Con.								
32121941	Hardboard made from hardboard produced at this location—Con.								
3212194161	Other coated or laminated hardboard, including doorskins, garage door panels, and furniture stock, made from hardboard produced at this location mil sq ft (1/8 in. basis) . .	3	X	D	D	3	X	D	D
3212194Y	Hardboard made from hardboard produced at this location, nsk	N	X	X	14 145	N	X	X	N
3212194YVW	Hardboard made from hardboard produced at this location, nsk	N	X	X	14 145	N	X	X	14 946
3212195	Cellulosic fiberboard (insulating board)	N	X	X	130 043	N	X	X	104 301
32121951	Cellulosic fiberboard (insulating board)	N	X	X	130 043	N	X	X	N
3212195100	Cellulosic fiberboard (insulating board) mil sq ft (1/2 in. basis) . .	6	X	1 020.2	130 043	5	X	1 097.4	104 301
3212197	Hardboard made from purchased hardboard	N	X	X	207 125	N	X	X	175 853
32121971	Hardboard made from purchased hardboard	N	X	X	197 644	N	X	X	N
3212197111	Machined and cut hardboard, including molded, cut to size, perforated, and panel stock, not coated, made from purchased hardboard mil sq ft (1/8 in. basis) . .	12	X	S	20 196	8	X	S	22 677
3212197121	Coated or laminated hardboard interior paneling made from purchased hardboard mil sq ft (1/8 in. basis) . .	10	X	S	116 068	6	X	100.4	46 422
3212197131	Other coated or laminated hardboard, including doorskins, garage door panels, furniture stock, and siding, made from purchased hardboard	14	X	X	61 380	21	X	X	61 624
3212197Y	Hardboard made from purchased hardboard, nsk	N	X	X	9 481	N	X	X	N
3212197YVW	Hardboard made from purchased hardboard, nsk	N	X	X	9 481	N	X	X	45 130
3212198	Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF	N	X	X	696 867	N	X	X	443 498
32121981	Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF	N	X	X	596 114	N	X	X	N
3212198111	Prefinished particleboard made from purchased particleboard mil sq ft (3/4 in. basis) . .	46	X	S	465 738	54	X	9737.9	321 652
3212198121	Prefinished or coated medium density fiberboard (MDF) made from purchased MDF mil sq ft (3/4 in. basis) . .	32	X	S	130 376	30	X	S	70 490
3212198Y	Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF, nsk	N	X	X	100 753	N	X	X	N
3212198YVW	Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF, nsk	N	X	X	100 753	N	X	X	51 356
321219W	Reconstituted wood products, nsk, total	N	X	X	220 793	N	X	X	116 546
321219WY	Reconstituted wood products, nsk, total	N	X	X	220 793	N	X	X	N
321219WYVW	Reconstituted wood products, nsk, for nonadministrative-record establishments	N	X	X	125 066	N	X	X	98 626
321219WYWY	Reconstituted wood products, nsk, for administrative-record establishments	N	X	X	95 727	N	X	X	17 920

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
3212191	PARTICLEBOARD MADE FROM PARTICLEBOARD PRODUCED AT THIS LOCATION		
	United States	1 263 554	948 492
	California	69 773	49 715
	Georgia	87 059	68 406
	North Carolina	49 662	34 863
	Oregon	373 016	284 175
	Virginia	87 214	78 803
3212192	WAFERBOARD AND ORIENTED STRANDBOARD		
	United States	1 249 636	1 131 599
	Georgia	138 328	N
	Maine	59 610	101 361
	Minnesota	184 934	275 474
	North Carolina	109 833	N
	Texas	136 281	N
3212193	MEDIUM DENSITY FIBERBOARD (MDF) MADE FROM MDF PRODUCED AT THIS LOCATION		
	United States	454 349	383 429
	South Carolina	83 889	70 688
3212194	HARDBOARD MADE FROM HARDBOARD PRODUCED AT THIS LOCATION		
	United States	945 403	683 397
	North Carolina	146 539	N
	Oregon	124 776	82 639
3212195	CELLULOSIC FIBERBOARD (INSULATING BOARD)		
	United States	130 043	104 301
3212197	HARDBOARD MADE FROM PURCHASED HARDBOARD		
	United States	207 125	175 853
	California	3 346	N
	Illinois	14 691	23 721
	Indiana	23 779	10 532
	North Carolina	24 538	21 295
3212198	PREFINISHED PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD (MDF) MADE FROM PURCHASED PARTICLEBOARD AND MDF		
	United States	696 867	443 498
	California	96 679	41 644
	Indiana	34 103	18 213
	Michigan	41 973	18 334
	North Carolina	49 949	63 030
	Oregon	82 718	52 095
	Texas	26 022	19 183
	Washington	58 208	N
	Wisconsin	65 576	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)
321219	RECONSTITUTED WOOD PRODUCT MFG				
11331019	Logs and bolts..... mil bd ft Intl 1/4 in. scale..	S	80 891	D	D
11331021	Pulpwood..... 1,000 standard cords..	P6 811.0	400 579	D	D
32100015	Chips, slabs, edgings, sawdust, and other wood waste, except planer shavings..... 1,000 s tons..	8 062.4	243 438	5 767.8	174 538
32100017	Planer shavings..... 1,000 s tons..	4 258.9	156 008	4 376.2	139 696
32121909	Hardboard.....	X	91 365	X	37 827
32121907	Medium density fiberboard (MDF)..... mil sq ft (3/4 in. basis)..	S	62 923	P93.3	30 095
32121903	Particleboard (wood)..... mil sq ft (3/4 in. basis)..	S	191 764	P477.0	106 384
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products..... 1,000 gallons..	P8 083.6	69 488	P7 496.9	62 169
32552007	Urethane adhesives..... mil lb (dry basis)..	S	36 078	N	N
32521141	Urea and melamine resins..... mil lb (dry basis)..	P2 465.1	331 136	P1 617.2	184 524

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)
321219	RECONSTITUTED WOOD PRODUCT MFG—Con.				
32521143	Phenolic and other tar acid resins mil lb (dry basis)	^q 446.9	172 516	^q 462.2	114 166
32410009	Petroleum wax mil lb (dry basis)	^q 334.2	61 173	^p 266.1	44 672
00190054	Vinyl and paper overlays mil sq ft sm	S	101 405	^{p1} 688.8	86 769
32521113	All other plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	X	8 823	X	27 679
00970099	All other materials and components, parts, containers, and supplies	X	278 857	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	259 326	X	97 270

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

321219 RECONSTITUTED WOOD PRODUCT MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing reconstituted wood sheets and boards.

The data published with NAICS code 321219 include the following SIC industry:

2493 Reconstituted wood products

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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
321113121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
3211131131.....	2421121.....	2421165 pt.....	3212117YVW pt.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
3211131141.....	2421125.....	2421177 pt.....	3212117YVW pt.....	2435300 pt.....	2435311.....	3212197YVW.....	2493600.....	2493600.....
3211131YVW.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
321113311.....	2421241.....	2421212 pt.....	321211WYVW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
3211133121.....	2421244.....	2421213 pt.....	321211WYVW.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
3211133131.....	2421247.....	2421215 pt.....				3212198YVW.....	2493700.....	2493700.....
3211133241.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....	321219W.....	24930.....	24930.....
3211133351.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219WYVW.....	2493000.....	2493000.....
3211133461.....	2421257.....	2421237 pt.....				321219WYVW.....	2493002.....	2493002.....
3211133YVW.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....			
			3212123111.....	2436501.....	2436501.....	3219111.....	24311.....	24311.....
3211135.....	24215.....	24215.....	3212123221.....	2436505.....	2436505.....	3219111111.....	2431131.....	2431131.....
321113511.....	2421516.....	2421516.....	3212123331.....	2436511.....	2436511.....	3219111121.....	2431132.....	2431132.....
3211135121.....	2421522.....	2421522.....	3212123441.....	2436521.....	2436521.....	3219111231.....	2431135.....	2431135.....
3211135231.....	2421518.....	2421518.....	3212123451.....	2436523.....	2436523.....	3219111241.....	2431136.....	2431136.....
3211135241.....	2421524.....	2421524.....	3212123YVW.....	2436500.....	2436500.....	3219111351.....	2431142.....	2431141 pt.....
3211135YVW.....	2421500.....	2421500.....				3219111361.....	2431143.....	2431141 pt.....
			3212125.....	24366.....	24366.....	3219111391 pt.....	2431191 pt.....	2431134.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111391 pt.....	2431191 pt.....	2431145.....
			3212125121.....	2436611.....	2436611.....	3219111YVW.....	2431100.....	2431100.....
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....			
			3212125141.....	2436615.....	2436615.....	3219113.....	24312.....	24312.....
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	3219113111.....	2431209.....	2431209.....
3211137111.....	2421817.....	2421817.....	3212125YVW.....	2436600.....	2436600.....	3219113121.....	2431215.....	2431215.....
3211137121.....	2421813.....	2421813.....				3219113YVW.....	2431200.....	2431200.....
3211137131 pt.....	2429001 pt.....	2429004.....	3212127.....	24367.....	24367.....			
3211137131 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....	3219115.....	24313.....	24313.....
3211137131 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	321911511.....	2431313.....	2431313.....
3211137141.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVW pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVW.....	2431300.....	2431300.....
3211137YVW pt.....	2421900 pt.....	2421900 pt.....	3212127YVW.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			3212129111.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVW pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVW pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYVW pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYVW pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYVW pt.....	2439000 pt.....	2439000 pt.....	321212WYVW.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYVW pt.....	2439003 pt.....	2439003 pt.....	321212WYVW.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYVW pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYVW pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYVW pt.....	2439002 pt.....	2439002 pt.....	3212130111.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			3212130221.....	2439015.....	2439031.....	3219117YVW.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
3211141111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
3211141121.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	3219119111.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVW.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
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321918WYVW pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVW pt	2429002 pt	2429002 pt
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						3219990YVW pt	3999002 pt	3999002 pt

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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)				
321911	Wood window & door mfg	1 315	1 408	64 083	1 706 601	51 838	101 438	1 228 808	3 740 751	4 978 553	8 730 522	201 276
243110	Millwork (pt)	N	1 408	64 083	1 706 601	51 838	101 438	1 228 808	3 740 751	4 978 553	8 730 522	201 276

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)				
321911, WOOD WINDOW & DOOR MFG												
United States	1	1 408	475	64 083	1 706 601	51 838	101 438	1 228 808	3 740 751	4 978 553	8 730 522	201 276
Alabama	1	30	13	1 433	31 436	1 058	2 002	18 721	78 162	129 064	208 043	3 421
Arizona	1	35	14	855	20 203	692	1 207	14 030	37 602	39 673	79 416	2 063
Arkansas	3	14	6	506	7 716	413	718	5 986	15 318	29 476	44 858	992
California	3	178	44	4 024	98 172	3 158	6 404	68 052	218 587	279 596	498 696	13 893
Colorado	3	32	8	613	16 517	429	829	9 007	30 434	34 089	64 579	1 391
Connecticut	3	17	3	240	8 176	145	312	3 877	19 325	20 744	40 221	834
Florida	1	77	25	1 479	31 897	1 139	2 112	21 895	65 097	112 013	178 423	3 829
Georgia	4	42	14	1 406	37 290	1 107	2 265	26 014	76 806	100 369	176 054	3 714
Idaho	-	17	6	745	18 032	565	1 061	13 146	39 740	48 479	89 573	390
Illinois	2	55	15	2 200	56 044	1 570	2 976	38 226	111 418	149 481	266 804	4 340
Indiana	-	31	20	1 772	42 062	1 389	2 618	28 593	97 790	147 669	243 359	4 406
Iowa	-	17	12	5 437	162 638	4 517	8 863	117 922	416 915	303 075	719 229	29 394
Kansas	-	10	2	208	4 180	172	303	2 770	7 147	7 009	14 084	370
Kentucky	4	16	4	488	11 807	420	809	9 616	34 954	38 255	73 201	1 421
Louisiana	6	18	4	286	6 306	240	443	4 591	10 726	12 728	23 476	659
Maine	4	17	3	422	7 185	336	518	5 127	12 288	15 314	27 677	889
Maryland	8	7	4	376	9 872	305	615	7 196	17 762	23 540	41 400	1 071
Massachusetts	2	35	4	399	11 680	279	551	6 877	20 772	30 569	51 422	861
Michigan	1	41	13	891	24 887	699	1 399	16 932	55 276	95 615	150 675	2 551
Minnesota	-	36	14	6 923	282 800	5 647	11 164	206 662	579 724	785 753	1 372 671	21 352
Mississippi	-	11	6	467	10 080	348	642	6 151	21 025	30 420	51 644	784
Missouri	2	23	4	400	9 232	288	532	5 554	16 626	25 949	42 125	1 252
Nebraska	2	7	3	349	7 830	270	545	5 401	22 012	42 103	64 135	926
New Hampshire	6	11	6	499	12 069	394	714	8 762	22 305	31 332	53 183	1 110
New Jersey	5	33	7	600	16 196	443	824	10 587	41 383	29 638	71 085	1 671
New York	6	51	12	704	19 841	548	1 011	14 253	39 659	39 620	78 917	2 595
North Carolina	1	31	14	1 318	25 809	1 131	2 057	19 929	64 090	95 738	166 543	2 695
Ohio	2	49	21	2 095	49 712	1 743	3 346	36 882	97 178	115 329	210 741	8 569
Oklahoma	2	11	4	132	2 517	101	163	1 715	5 084	6 984	11 818	328
Oregon	-	44	22	3 165	80 237	2 727	5 520	62 678	171 470	265 342	429 476	6 775
Pennsylvania	1	53	16	2 100	53 070	1 638	2 832	35 703	115 640	130 579	246 250	5 832
South Carolina	-	21	8	958	22 084	843	1 605	16 880	45 737	78 077	123 808	6 286
Tennessee	-	21	10	1 455	33 121	1 290	2 410	26 982	75 094	109 723	184 305	5 050
Texas	3	92	29	3 045	59 916	2 493	4 859	40 218	154 687	258 869	413 894	8 721
Utah	-	18	1	351	7 453	298	499	5 827	11 306	38 839	50 077	880
Vermont	-	9	2	128	2 288	106	226	1 674	10 139	14 582	24 656	835
Virginia	-	38	20	2 814	70 627	2 108	5 001	48 783	128 630	157 648	288 245	7 556
Washington	1	65	23	2 164	56 785	1 815	3 506	42 644	122 742	173 001	296 270	3 742
Wisconsin	-	50	30	10 017	263 365	8 475	17 044	201 906	599 060	884 072	1 478 853	35 087

* 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
321911, WOOD WINDOW & DOOR MFG		321911, WOOD WINDOW & DOOR MFG—Con.	
Companies ¹	number.. 1 315	Value added	\$1,000.. 3 740 751
All establishments	number.. 1 408	Total inventories, beginning of year	\$1,000.. 994 941
Establishments with 1 to 19 employees	number.. 933	Finished goods inventories, beginning of year	\$1,000.. 219 075
Establishments with 20 to 99 employees	number.. 344	Work-in-process inventories, beginning of year	\$1,000.. 253 232
Establishments with 100 employees or more	number.. 131	Materials and supplies inventories, beginning of year	\$1,000.. 522 634
All employees	number.. 64 083	Total inventories, end of year	\$1,000.. 1 007 082
Total compensation ²	\$1,000.. 2 093 239	Finished goods inventories, end of year	\$1,000.. 217 877
Annual payroll	\$1,000.. 1 706 601	Work-in-process inventories, end of year	\$1,000.. 243 212
Total fringe benefits	\$1,000.. 386 638	Materials and supplies inventories, end of year	\$1,000.. 545 993
Production workers, average for year	number.. 51 838	Gross book value of total assets at beginning of year	\$1,000.. 2 041 811
Production workers on March 12	number.. 50 243	Total capital expenditures (new and used)	\$1,000.. 201 276
Production workers on May 12	number.. 51 773	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 39 343
Production workers on August 12	number.. 52 950	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 161 933
Production workers on November 12	number.. 52 388	Total retirements ²	\$1,000.. 50 458
Production-worker hours	1,000.. 101 438	Gross book value of total assets at end of year	\$1,000.. 2 192 629
Production-worker wages	\$1,000.. 1 228 808	Total depreciation during year ²	\$1,000.. 145 510
Total cost of materials	\$1,000.. 4 978 553	Total rental payments ²	\$1,000.. 68 041
Cost of materials, parts, containers, etc., consumed	\$1,000.. 4 498 512	Buildings and other structures rental payments ²	\$1,000.. 32 306
Cost of resales	\$1,000.. 387 500	Machinery and equipment rental payments ²	\$1,000.. 35 735
Cost of fuels	\$1,000.. 15 352	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 9 221
Cost of purchased electricity	\$1,000.. 56 572	Response coverage ratio ⁴	percent.. 80
Cost of contract work	\$1,000.. 20 617	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 44 167
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 065 547	Response coverage ratio ⁴	percent.. 80
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 15 839
Total value of shipments	\$1,000.. 8 730 522	Response coverage ratio ⁴	percent.. 80
Primary products value of shipments	\$1,000.. 7 607 368	Cost of purchased legal services ³	\$1,000.. 20 206
Secondary products value of shipments	\$1,000.. 600 803	Response coverage ratio ⁴	percent.. 80
Total miscellaneous receipts	\$1,000.. 522 351	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 7 208
Value of resales	\$1,000.. 486 860	Response coverage ratio ⁴	percent.. 80
Contract receipts	\$1,000.. 15 127	Cost of purchased advertising services ³	\$1,000.. 54 103
Other miscellaneous receipts	\$1,000.. 20 364	Response coverage ratio ⁴	percent.. 80
Primary products specialization ratio	percent.. 92	Cost of purchased software and other data processing services ³	\$1,000.. 9 535
Value of primary products shipments made in all industries	\$1,000.. 8 034 561	Response coverage ratio ⁴	percent.. 80
Value of primary products shipments made in this industry	\$1,000.. 7 607 368	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 9 183
Value of primary products shipments made in other industries	\$1,000.. 427 193	Response coverage ratio ⁴	percent.. 80
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)				
321911, WOOD WINDOW & DOOR MFG												
All establishments	1	1 408	475	64 083	1 706 601	51 838	101 438	1 228 808	3 740 751	4 978 553	8 730 522	201 276
Establishments with 1 to 4 employees	8	410	—	844	17 234	712	1 109	13 640	32 907	43 897	77 209	2 065
Establishments with 5 to 9 employees	5	272	—	1 884	42 046	1 497	2 577	31 457	82 081	101 170	184 365	4 086
Establishments with 10 to 19 employees	3	251	—	3 424	82 752	2 632	4 791	57 944	169 226	213 364	384 372	8 646
Establishments with 20 to 49 employees	2	235	235	7 248	183 346	5 618	10 501	121 410	367 648	515 703	887 823	20 355
Establishments with 50 to 99 employees	2	109	109	7 645	185 767	5 932	11 319	119 982	413 527	588 021	1 003 683	23 570
Establishments with 100 to 249 employees	1	87	87	13 364	308 712	10 738	21 415	216 251	728 746	1 093 700	1 821 085	44 282
Establishments with 250 to 499 employees	1	28	28	10 510	263 288	8 836	17 826	205 004	568 849	741 501	1 305 671	29 103
Establishments with 500 to 999 employees	—	10	10	6 544	166 241	5 307	10 134	120 954	393 035	651 538	1 046 840	28 184
Establishments with 1,000 to 2,499 employees	—	3	3	3 830	100 846	3 287	7 420	82 313	221 158	210 135	427 564	11 632
Establishments with 2,500 employees or more	—	3	3	8 790	356 369	7 279	14 346	259 853	763 574	819 524	1 591 910	29 353
Administrative records ²	9	338	—	1 276	25 039	1 063	1 642	18 458	47 455	65 245	113 041	2 942

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)				
321911	Wood window & door mfg	1 408	64 083	1 706 601	51 838	101 438	1 228 808	3 740 751	4 978 553	8 730 522	201 276
3219111	Wood window units	121	25 966	794 429	21 132	42 433	582 882	1 728 209	2 028 244	3 765 426	86 661
3219113	Wood sash, excluding sash shipped in window units	8	93	2 122	72	131	1 572	5 463	4 873	10 330	180
3219115	Wood window and door frames, including door frames shipped in door units, excluding window frames shipped in window units	39	2 960	72 699	2 594	5 096	59 284	152 467	321 650	467 948	8 772
3219117	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections	250	14 161	350 077	10 952	22 283	235 250	865 233	1 345 960	2 214 366	49 855
3219119	Other wood doors, including garage, patio, bifold, cabinet, screen, storm, and louver	157	8 286	192 182	6 919	13 098	138 921	392 766	404 757	798 793	21 253

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)
321911	Wood windows and doors	N	X	X	8 034 561	N	X	X	N
32191111	Wood window units	N	X	X	2 579 448	N	X	X	2 393 830
3219111111	Double hung wood window units	N	X	X	857 328	N	X	X	N
3219111111	Double hung wood window units, cladded	55	X	P4 089.7	688 857	62	X	P5 075.4	679 716
3219111121	Other double hung wood window units	63	X	P1 336.4	168 471	64	X	Q2 485.6	217 350
32191112	Casement wood window units	N	X	X	901 018	N	X	X	N
3219111231	Casement wood window units, cladded	58	X	P4 244.9	758 667	48	X	P5 217.3	760 650
3219111241	Other casement wood window units	58	X	P824.6	142 351	64	X	S	188 758
32191113	All other wood window units, including horizontal sliding, awning, and single hung	N	X	X	352 367	N	X	X	N
3219111351	Horizontal sliding wood window units, cladded	21	X	146.9	34 534	N	X	N	N
3219111361	Other horizontal sliding wood window units	20	X	S	15 564	N	X	N	N
3219111391	All other wood window units, including awning and single hung	54	X	P1 833.2	302 269	N	X	N	N
3219111Y	Wood window units, nsk	N	X	X	468 735	N	X	X	N
3219111YWV	Wood window units, nsk	N	X	X	468 735	N	X	X	94 099
3219113	Wood sash, excluding sash shipped in window units	N	X	X	136 923	N	X	X	134 229
32191131	Wood sash, excluding sash shipped in window units	N	X	X	122 008	N	X	X	N
3219113111	Knockdown and open wood sash, excluding sash shipped in window units	9	X	X	53 416	19	X	X	71 356
3219113121	Glazed wood sash, excluding sash shipped in window units	20	X	924.1	68 592	21	X	P1 008.3	57 206
3219113Y	Wood sash, excluding sash shipped in window units, nsk	N	X	X	14 915	N	X	X	N
3219113YWV	Wood sash, excluding sash shipped in window units, nsk	N	X	X	14 915	N	X	X	5 667
3219115	Wood window and door frames, including door frames shipped in door units, excluding window frames shipped in window units	N	X	X	486 543	N	X	X	462 937
32191151	Wood window and door frames, including door frames shipped in door units, excluding window frames shipped in window units	N	X	X	473 435	N	X	X	N
3219115111	Wood window frames, excluding window frames shipped in window units	30	X	X	100 092	49	X	X	141 325
3219115121	Wood door frames, including door frames shipped in door units	120	X	X	373 343	103	X	X	295 773
3219115Y	Wood window and door frames, including door frames shipped in door units, excluding window frames shipped in window units, n.s.k.	N	X	X	13 108	N	X	X	N
3219115YWV	Wood window and door frames, including door frames shipped in door units, excluding window frames shipped in window units, n.s.k.	N	X	X	13 108	N	X	X	25 839
3219117	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections	N	X	X	2 042 240	N	X	X	1 590 749
32191171	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections	N	X	X	1 374 448	N	X	X	N
3219117111	Panel Douglas fir doors, interior and exterior, including doors with glazed sections	49	X	1 211.3	143 988	66	X	S	165 604
3219117115	Panel western pine doors, interior and exterior, including doors with glazed sections	36	X	S	157 926	61	X	S	233 825
3219117121	Other panel wood doors, interior and exterior, including doors with glazed sections	153	X	S	219 011	112	X	Q703.4	111 526
3219117131	Flush, hollow core, softwood faced doors, interior and exterior, including doors with glazed sections	16	X	X	14 589	14	X	X	56 349
3219117135	Flush, hollow core, hardwood faced doors (including lauan, birch, oak, etc.), interior and exterior, including doors with glazed sections	54	X	S	119 869	91	X	S	254 942
3219117141	Flush, hollow core, hardboard faced doors, interior and exterior, including doors with glazed sections	38	X	S	118 439	42	X	Q9 370.6	174 097
3219117145	Flush, hollow core, other faced doors, interior and exterior, including doors with glazed sections	11	X	S	14 902	13	X	S	23 677
3219117151	Flush, solid wood stave core, hardwood faced doors (including lauan, birch, oak, etc.), interior and exterior, including doors with glazed sections	41	X	X	44 769	55	X	X	105 461

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)
321911	Wood windows and doors—Con.								
3219117	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections—Con.								
32191171	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections—Con.								
3219117155	Flush, solid composition core, hardwood faced doors (including luan, birch, oak, etc.), interior and exterior, including doors with glazed sections thousands	56	X	S	308 435	56	X	S	210 315
3219117161	Flush, solid core, other faced doors, interior and exterior, including doors with glazed sections thousands	17	X	S	11 655	N	X	N	N
3219117171	Molded face doors, interior and exterior, including doors with glazed sections thousands	40	X	S	220 865	N	X	N	N
3219117Y	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections, nsk	N	X	X	667 792	N	X	X	N
3219117YWV	Wood panel, flush, and molded face doors, interior and exterior, including doors with glazed sections, nsk	N	X	X	667 792	N	X	X	N
3219119	Other wood doors, including garage, bifold, patio, cabinet, screen, storm, and louver	N	X	X	1 335 500	N	X	X	970 859
32191191	Other wood doors, including garage, bifold, patio, cabinet, screen, storm, and louver	N	X	X	1 243 747	N	X	X	N
3219119111	Wood garage doors	28	X	X	77 972	34	X	X	119 592
3219119121	Wood bifold doors	42	X	X	61 027	48	X	X	99 309
3219119131	Wood patio doors, sliding	44	X	X	251 561	41	X	X	237 662
3219119141	Wood patio doors, swinging	41	X	X	321 238	31	X	X	188 788
3219119151	Wood cabinet doors	115	X	X	419 797	N	X	X	N
3219119191	Other wood doors, including screen, storm, and louver	49	X	X	112 152	N	X	X	N
3219119Y	Other wood doors, including garage, patio, bifold, cabinet, screen, storm, and louver, nsk	N	X	X	91 753	N	X	X	N
3219119YWV	Other wood doors, including garage, patio, bifold, cabinet, screen, storm, and louver, nsk	N	X	X	91 753	N	X	X	49 531
321911W	Wood windows and doors, nsk, total	N	X	X	1 453 907	N	X	X	N
321911WY	Wood windows and doors, nsk, total	N	X	X	1 453 907	N	X	X	N
321911WYWV	Wood windows and doors, nsk, for nonadministrative-record establishments	N	X	X	1 346 889	N	X	X	N
321911WYWY	Wood windows and doors, nsk., for administrative-record establishments	N	X	X	107 018	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
3219111	WOOD WINDOW UNITS		
	United States	2 579 448	2 393 830
	California	35 750	21 793
	Colorado	4 834	21 066
	Georgia	74 186	N
	Massachusetts	8 048	14 671
	Michigan	28 812	48 004
	Missouri	21 706	N
	New York	6 976	15 993
	North Carolina	32 888	12 182
	Ohio	56 131	104 726
	Pennsylvania	15 922	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
3219111	WOOD WINDOW UNITS—Con.		
	Texas	3 809	7 332
	Virginia	66 137	61 611
	Washington	6 936	17 969
	Wisconsin	642 505	508 652
3219113	WOOD SASH, EXCLUDING SASH SHIPPED IN WINDOW UNITS		
	United States	136 923	134 229
	California	11 012	2 854
	Georgia	7 279	N
	North Carolina	8 568	N
	Oregon	22 411	N
	Wisconsin	16 153	12 457
3219115	WOOD WINDOW AND DOOR FRAMES, INCLUDING DOOR FRAMES SHIPPED IN DOOR UNITS, EXCLUDING WINDOW FRAMES SHIPPED IN WINDOW UNITS		
	United States	486 543	462 937
	Arizona	4 112	5 431
	California	80 018	81 628
	Colorado	2 257	N
	Florida	2 485	2 652
	Georgia	6 443	N
	Indiana	6 864	N
	Massachusetts	2 349	4 897
	Minnesota	6 869	10 972
	North Carolina	25 401	N
	Ohio	4 358	N
	Oregon	190 453	180 783
	Pennsylvania	4 273	6 194
	Texas	34 614	17 151
	Virginia	9 522	4 925
	Washington	16 808	17 990
	Wisconsin	16 408	6 345
3219117	WOOD PANEL, FLUSH, AND MOLDED FACE DOORS, INTERIOR AND EXTERIOR, INCLUDING DOORS WITH GLAZED SECTIONS		
	United States	2 042 240	1 590 749
	Alabama	110 938	67 977
	Arizona	30 780	29 107
	California	181 783	104 780
	Colorado	10 387	7 760
	Connecticut	2 276	N
	Florida	58 569	42 274
	Georgia	18 609	24 540
	Illinois	13 256	23 962
	Indiana	141 027	100 363
	Iowa	110 936	36 187
	Kansas	15 122	N
	Louisiana	5 030	6 247
	Massachusetts	15 360	11 903
	Michigan	73 858	86 343
	Minnesota	17 220	7 316
	Missouri	10 246	15 733
	New Mexico	3 687	N
	New York	18 467	31 895
	North Carolina	35 516	40 107
	Ohio	24 756	28 267
	Oregon	51 218	93 500
	Pennsylvania	99 431	62 359
	South Carolina	17 744	14 090
	Texas	222 664	142 338
	Virginia	80 336	37 479
	Washington	154 406	161 891
	Wisconsin	294 990	257 779
3219119	OTHER WOOD DOORS, INCLUDING GARAGE, BIFOLD, PATIO, CABINET, SCREEN, STORM, AND LOUVER		
	United States	1 335 500	970 859
	Alabama	41 285	25 499
	Arizona	7 979	7 247
	California	125 505	76 410
	Colorado	8 525	5 373
	Florida	23 626	15 621
	Georgia	15 777	13 899
	Idaho	14 492	N
	Illinois	26 623	21 055
	Indiana	55 368	54 678
	Kentucky	9 066	5 329
	Massachusetts	3 616	3 727
	Michigan	9 643	24 047
	Mississippi	8 607	N
	Missouri	4 916	N
	Nebraska	6 307	N
	New Jersey	10 453	N
	New York	6 343	12 713
	North Carolina	23 873	7 485
	Ohio	38 492	41 990
	Oklahoma	5 281	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
3219119	OTHER WOOD DOORS, INCLUDING GARAGE, BIFOLD, PATIO, CABINET, SCREEN, STORM, AND LOUVER—Con.		
	Oregon	61 536	37 130
	Pennsylvania	77 201	38 064
	South Carolina	14 936	5 492
	Texas	75 226	89 622
	Utah	11 294	N
	Virginia	46 431	37 546
	Washington	46 089	26 073
	Wisconsin	142 138	68 826

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)
321911	WOOD WINDOW & DOOR MFG				
32100023	Hardwood rough lumber	X	97 365	X	N
32100029	Softwood rough lumber	X	140 502	X	N
32100027	Hardwood dressed lumber	X	61 840	X	N
32100033	Softwood dressed lumber	X	178 088	X	N
32191201	Softwood cut stock	X	566 571	X	N
32191203	Hardwood cut stock and dimension, excluding furniture frames	X	66 552	X	N
32121101	Hardwood plywood	X	120 276	X	N
32121201	Softwood plywood	X	35 032	X	N
32121105	Hardwood veneer	X	45 278	X	N
32121903	Particleboard (wood)	X	58 599	X	N
32121909	Hardboard	X	59 819	X	N
32121907	Medium density fiberboard (MDF)	X	43 443	X	N
32552003	Glues and adhesives	X	54 997	X	N
32721103	Glass (float, sheet and plate)	X	307 949	X	N
32610013	Plastics products consumed in the form of sheets, rods, tubes, film, and other shapes	X	122 953	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard	X	37 756	X	N
33251009	Builders' hardware (including door locks, locksets, lock trim, screen hardware, etc.)	X	210 977	X	N
00970099	All other materials and components, parts, containers, and supplies	X	551 462	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	1 739 053	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

321911 WOOD WINDOW AND DOOR MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing window and door units, sash, window and door frames, and doors from wood or wood clad with metal or plastics.

The data published with NAICS code 321911 include the following SIC industry:

2431 Millwork (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
3211131	24211 pt	24211 pt	3212117	24353	24353	3212197	24936	24936
321113111	2421111	2421161 pt	3212117111	2435331	2435331	3212197111	2493612	2493612
321113121	2421115	2421163 pt	3212117291	2435398	2435398	3212197121	2493616	2493616
3211131131	2421121	2421165 pt	3212117YVV	2435300 pt	2435300	3212197131	2493617	2493617
3211131141	2421125	2421177 pt	3212117YVW	2435300 pt	2435311	3212197YVW	2493600	2493600
3211131YVV	2421100 pt	2421100 pt						
3211133	24212 pt	24212 pt	321211W	24350	24350	3212198	24937	24937
3211133111	2421241	2421212 pt	321211WYVW	2435000	2435000	3212198111	2493721	2493721
3211133121	2421244	2421213 pt	321211WYVY	2435002	2435002	3212198121	2493731	2493731
3211133131	2421247	2421215 pt				3212198YVW	2493700	2493700
3211133241	2421251	2421233 pt	3212121	24364	24364	321219W	24930	24930
3211133351	2421254	2421235 pt	3212121100	2436400	2436400	321219WYVW	2493000	2493000
3211133461	2421257	2421237 pt				321219WYVY	2493002	2493002
3211133YVW	2421200 pt	2421200 pt	3212123	24365	24365			
			3212123111	2436501	2436501	3219111	24311	24311
3211135	24215	24215	3212123221	2436505	2436505	3219111111	2431131	2431131
3211135111	2421516	2421516	3212123331	2436511	2436511	3219111121	2431132	2431132
3211135121	2421522	2421522	3212123441	2436521	2436521	3219111231	2431135	2431135
3211135231	2421518	2421518	3212123451	2436523	2436523	3219111241	2431136	2431136
3211135241	2421524	2421524	3212123YVW	2436500	2436500	3219111351	2431142	2431141 pt
3211135YVW	2421500	2421500				3219111361	2431143	2431141 pt
			3212125	24366	24366	3219111391 pt	2431191 pt	2431134
3211137 pt.	24218 pt	24218 pt	3212125111	2436607	2436607	3219111391 pt	2431191 pt	2431145
			3212125121	2436611	2436611	3219111YVW	2431100	2431100
3211137 pt.	24219 pt	24219 pt	3212125131	2436613	2436613			
			3212125141	2436615	2436615	3219113	24312	24312
3211137 pt.	24290 pt	24290 pt	3212125151	2436617	2436617	3219113111	2431209	2431209
3211137111	2421817	2421817	3212125YVW	2436600	2436600	3219113121	2431215	2431215
3211137121	2421813	2421813				3219113YVW	2431200	2431200
3211137131 pt	2429011 pt	2429004	3212127	24367	24367			
3211137131 pt	2429011 pt	2429007	3212127111	2436703	2436703	3219115	24313	24313
3211137131 pt	2429011 pt	2429009	3212127121	2436721	2436721	321911511	2431313	2431313
3211137141	2421911	2421911	3212127191 pt	2436727 pt	2436723	3219115121	2431315	2431315
3211137YVW pt	2421800 pt	2421800 pt	3212127191 pt	2436727 pt	2436725	3219115YVW	2431300	2431300
3211137YVW pt	2421900 pt	2421900 pt	3212127YVW	2436700	2436700			
						3219117	24314	24314
321113W pt.	24210 pt	24210 pt	3212129	24363	24363	3219117111	2431411	2431411
			3212129111	2436331	2436331	3219117115	2431413	2431413
321113W pt.	24290 pt	24290 pt	3212129191	2436398	2436398	3219117121	2431419	2431419
			3212129YVW pt	2436300 pt	2436300	3219117131	2431431	2431431
321113W pt.	24390 pt	24390 pt	3212129YVW pt	2436300 pt	2436311	3219117135	2431433	2431433
321113WYVW pt.	2421000 pt	2421000 pt				3219117141	2431435	2431435
321113WYVW pt.	2429000 pt	2429000 pt	321212W	24360	24360	3219117145	2431437	2431437
321113WYVW pt.	2439000 pt	2439000 pt	321212WYVW	2436000	2436000	3219117151	2431441	2431441
321113WYVW pt.	2439085	2439033 pt	321212WYVY	2436002	2436002	3219117155	2431445	2431445
321113WYVW pt.	2421002 pt	2421002 pt				3219117161 pt	2431449 pt	2431446
321113WYVW pt.	2429002 pt	2429002 pt	3212130	24390 pt	24390 pt	3219117161 pt	2431449 pt	2431448
321113WYVW pt.	2439002 pt	2439002 pt	3212130111	2439011	2439098 pt	3219117171	2431461	2431400 pt
			3212130221	2439015	2439031	3219117YVW	2431400	2431400 pt
3211141	24912	24912	3212130231	2439021	2439098 pt			
3211141111	2491201	2491201	3212130241 pt	2439025 pt	2439035	3219119	24315	24315
3211141121	2491203	2491203	3212130241 pt	2439025 pt	2439098 pt	3219119111	2431561	2431561
3211141131 pt	2491208 pt	2491205	3212130YVW	2439000 pt	2439000 pt	3219119121	2431584	2431584
3211141131 pt	2491208 pt	2491207	3212130YVY	2439002 pt	2439002 pt	3219119131	2431585	2431585
3211141141	2491209	2491209				3219119141	2431587	2431587
3211141151	2491212	2491212	3212140	24390 pt	24390 pt	3219119151	2431588	2431597 pt
3211141161	2491214	2491214	3212140111 pt	2439061 pt	2439051 pt	3219119191 pt	2431591 pt	2431575
3211141171	2491216	2491216	3212140111 pt	2439061 pt	2439098 pt	3219119191 pt	2431591 pt	2431581
3211141YVW	2491200	2491200	3212140121	2439065	2439098 pt	3219119191 pt	2431591 pt	2431597 pt
			3212140131 pt	2439071 pt	2439051 pt	3219119YVW	2431500	2431500
3211145	24913	24913	3212140131 pt	2439071 pt	2439098 pt			
3211145111	2491302	2491302	3212140YVW	2439000 pt	2439000 pt	321911W	24310 pt	24310 pt
3211145121	2491305	2491305	3212140YVY	2439002 pt	2439002 pt	321911WYVW	2431000 pt	2431000 pt
3211145131	2491307	2491307				321911WYVY	2431002 pt	2431002 pt
3211145141	2491309	2491309	3212191	24931	24931			
3211145151	2491312	2491312	3212191111	2493111 pt	2493120	3219121	24211 pt	24211 pt
3211145161	2491314	2491314	3212191111 pt	2493111 pt	2493121 pt	321912111	2421135	2421161 pt
3211145171	2491317	2491317	3212191221 pt	2493115 pt	2493103	3219121121	2421141	2421163 pt
3211145191	2491321	2491321	3212191221 pt	2493115 pt	2493105	3219121131	2421145	2421165 pt
3211145YVW	2491300	2491300	3212191291	2493191	2493121 pt	3219121141	2421151	2421177 pt
			3212191YVW	2493100	2493100	3219121151 pt	2421155 pt	2421161 pt
3211149	24919	24919				3219121151 pt	2421155 pt	2421163 pt
3211149111	2491905	2491905	3212192	24932	24932	3219121151 pt	2421155 pt	2421165 pt
3211149121	2491907	2491907	3212192111	2493205	2493205	3219121151 pt	2421155 pt	2421175
3211149191	2491911	2491911	3212192121	2493207	2493207	3219121YVW	2421100 pt	2421100 pt
3211149YVW	2491900	2491900	3212192191 pt	2493291 pt	2493209			
			3212192191 pt	2493291 pt	2493221	3219123	24212 pt	24212 pt
321114W	24910	24910	3212192YVW	2493200	2493200	3219123111	2421264	2421212 pt
321114WYVW	2491000	2491000				3219123121	2421267	2421213 pt
321114WYVY	2491002	2491002	3212193	24933	24933	3219123131	2421271	2421215 pt
			3212193111 pt	2493311 pt	2493314 pt	3219123141	2421274	2421233 pt
3212111	24354	24354	3212193111 pt	2493311 pt	2493316 pt	3219123151	2421277	2421235 pt
3212111111	2435419	2435419	3212193191 pt	2493391 pt	2493314 pt	3219123161	2421281	2421237 pt
3212111221	2435415	2435415	3212193191 pt	2493391 pt	2493316 pt	3219123171 pt	2421284 pt	2421212 pt
3212111231	2435417	2435417	3212193YVW	2493300	2493300	3219123171 pt	2421284 pt	2421213 pt
3212111241	2435421	2435421				3219123171 pt	2421284 pt	2421215 pt
3212111251	2435427	2435427	3212194	24934	24934	3219123171 pt	2421284 pt	2421231
3212111261	2435431	2435431	3212194111	2493412	2493412	3219123YVW	2421200 pt	2421200 pt
3212111YVW	2435400	2435400	3212194121	2493414	2493414			
			3212194131	2493416	2493416	3219125	24262	24262
3212113	24351	24351	3212194141	2493417	2493417	3219125111	2426231	2426224 pt
3212113111	2435101	2435101	3212194151	2493418	2493418	3219125115	2426241	2426224 pt
3212113221	2435105	2435105	3212194161	2493419	2493419	3219125221	2426233	2426251 pt
3212113231	2435107	2435107	3212194YVW	2493400	2493400	3219125225	2426243	2426251 pt
3212113291	2435147	2435147				3219125331	2426235	2426281 pt
3212113YVW	2435100	2435100	3212195	24935	24935	3219125335	2426245	2426281 pt
			3212195100	2493500	2493500	3219125441	2426283	2426283

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVV	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVV pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVV pt	2439081	2439033 pt	3219207YVV pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVV pt	2421002 pt	2421002 pt	3219207YVV pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVV pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVV pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVV pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVV pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVV pt	2441000	2441000	3219990144	2499451	2499451
3219181YVV	2431600	2431600	321920WYVV pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVV pt	2449000 pt	2449000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVV pt	2499000 pt	2499000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVV pt	2429002 pt	2429002 pt	3219990157	2499462	2499462
3219183YVV	2431700	2431700	321920WYVV pt	2441002	2441002	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVV pt	2448002	2448002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVV pt	2449002	2449002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVV pt	2499002 pt	2499002 pt	3219990171	2499489	2499489
3219185121	2431825	2431825	3219911	24511	24511	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911111	2451111	2451111	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911121 pt	2451112 pt	2451113	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451115	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911351	2451118	2451118	3219990191 pt	2499498 pt	2499498 pt
3219185YVV pt	2421800 pt	2421800 pt	3219911YVV	2451100	2451100	3219990191 pt	3131033	3131061 pt
3219185YVV pt	2431800	2431800	3219915	24512	24512	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915111	2451222	2451222	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915121	2451230	2451230	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915YVV	2451200	2451200	3219990YVV pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	321991W	24510	24510	3219990YVV pt	2421000 pt	2421000 pt
3219187241	2426131	2426131	321991WYVV	2451000	2451000	3219990YVV pt	2421800 pt	2421800 pt
3219187251	2426141	2426141	321991WYVV	2451002	2451002	3219990YVV pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	3219921	24521	24521	3219990YVV pt	2429000 pt	2429000 pt
3219187YVV	2426100	2426100	3219921111	2452173	2452173	3219990YVV pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921121	2452175	2452175	3219990YVV pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921YVV	2452100	2452100	3219990YVV pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219923	24522	24522	3219990YVV pt	2499900 pt	2499900 pt
321918WYVV pt	2421000 pt	2421000 pt	3219923111	2452217	2452217	3219990YVV pt	2499100 pt	2499100 pt
321918WYVV pt	2426000 pt	2426000 pt	3219923121	2452219	2452219	3219990YVV pt	2499400 pt	2499400 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923131	2452223	2452223	3219990YVV pt	2499900 pt	2499900 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499100 pt	2499100 pt
321918WYVV pt	2426002 pt	2426002 pt				3219990YVV pt	2499400 pt	2499400 pt

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1997

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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)				
321912	Cut stock, resawing lumber, & planing	1 296	1 395	39 806	886 238	34 491	67 457	684 628	1 978 033	4 115 372	6 062 195	159 638
242120	Sawmills & planing mills, general (pt)	N	756	22 091	516 223	18 864	36 951	388 118	1 271 600	3 285 659	4 533 030	109 275
242610	Hardwood dimension & flooring mills (pt)	N	619	17 109	357 168	15 085	29 543	286 526	676 579	785 166	1 455 914	42 584
243940	Structural wood members, n.e.c. (pt)	N	-	-	-	-	-	-	-	-	-	-
249910	Wood products, n.e.c. (pt)	N	20	606	12 847	542	963	9 984	29 854	44 547	73 251	7 779

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)
321912, CUT STOCK, RESAWING LUMBER, & PLANING												
United States	1	1 395	487	39 806	886 238	34 491	67 457	684 628	1 978 033	4 115 372	6 062 195	159 638
Alabama	-	38	15	1 211	25 298	998	1 851	15 660	83 567	171 235	250 735	3 818
Arkansas	-	38	11	752	14 512	641	1 256	10 946	26 624	42 456	69 275	1 579
California	1	87	39	2 775	60 349	2 468	4 675	47 396	149 775	333 062	484 246	10 770
Colorado	-	10	2	227	4 571	182	350	3 447	7 754	62 749	70 613	377
Connecticut	-	6	1	107	4 309	93	186	2 241	6 473	4 978	11 458	586
Florida	1	21	7	424	9 776	363	635	6 753	29 775	93 685	121 483	1 055
Georgia	1	35	9	761	14 057	663	1 163	11 196	38 278	146 323	183 102	4 814
Idaho	-	21	9	744	18 511	677	1 263	15 774	55 343	231 994	286 587	1 178
Illinois	5	17	2	203	3 972	172	308	3 159	7 172	8 981	16 241	547
Indiana	-	50	28	2 255	59 672	1 910	4 179	44 661	127 359	268 263	393 026	12 460
Iowa	-	7	4	209	4 473	197	352	4 197	10 811	19 059	29 979	2 941
Kansas	-	7	2	147	2 961	128	258	2 173	8 785	33 031	41 204	1 010
Kentucky	2	46	21	1 826	34 779	1 633	3 257	27 819	64 468	86 072	152 655	2 892
Louisiana	1	12	3	124	2 293	110	186	1 722	6 738	11 594	18 405	222
Maine	2	27	10	784	17 230	636	1 237	12 718	30 877	49 104	78 959	3 157
Maryland	-	10	2	329	6 974	289	683	5 295	10 605	18 257	30 664	788
Michigan	3	47	12	1 017	24 916	832	1 589	17 351	61 634	141 761	201 546	7 493
Minnesota	-	28	6	795	22 130	679	1 432	17 981	49 344	49 112	97 673	1 411
Mississippi	-	46	14	1 097	24 987	975	1 919	20 740	58 054	123 087	178 005	4 250
Missouri	1	66	15	1 019	19 329	839	1 517	14 535	40 074	68 784	107 932	2 765
Montana	-	14	9	384	9 046	340	619	7 682	20 650	38 845	59 831	579
New Hampshire	-	10	5	250	7 785	227	490	5 229	33 687	57 106	88 619	1 348
New York	2	52	14	890	18 454	766	1 501	13 458	39 367	54 768	94 135	4 321
North Carolina	1	115	49	3 319	69 889	2 948	5 463	56 586	124 255	188 831	312 103	14 013
Ohio	-	39	13	1 052	25 437	910	1 830	20 422	53 976	107 787	159 501	4 356
Oregon	-	74	31	3 342	87 883	2 908	6 187	69 646	157 086	427 886	594 215	16 181
Pennsylvania	1	78	24	2 676	62 087	2 299	4 667	48 289	134 661	224 312	356 304	13 086
South Carolina	1	20	8	617	11 389	508	960	8 777	21 622	27 261	48 257	1 051
Tennessee	1	70	21	2 058	40 930	1 798	3 486	31 924	75 652	106 773	182 285	4 370
Texas	-	39	17	1 299	24 640	1 147	2 142	18 340	69 191	230 189	295 735	4 477
Utah	-	10	1	261	5 992	187	403	3 918	10 207	18 333	28 921	669
Vermont	4	15	3	255	3 991	166	318	3 042	8 130	7 714	15 826	934
Virginia	1	47	14	1 412	29 310	1 244	2 381	23 769	79 926	97 142	175 729	5 213
Washington	-	50	21	1 818	43 854	1 651	3 348	37 211	109 225	228 188	334 470	14 814
West Virginia	-	33	13	1 277	21 787	1 170	2 198	18 301	48 892	80 361	128 479	2 773
Wisconsin	-	55	20	1 127	24 228	938	1 719	17 122	69 939	144 360	205 470	4 849

* 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
321912, CUT STOCK, RESAWING LUMBER, & PLANING		321912, CUT STOCK, RESAWING LUMBER, & PLANING—Con.	
Companies ¹	number.. 1 296	Value added	\$1,000.. 1 978 033
All establishments	number.. 1 395	Total inventories, beginning of year	\$1,000.. 786 715
Establishments with 1 to 19 employees	number.. 908	Finished goods inventories, beginning of year	\$1,000.. 341 112
Establishments with 20 to 99 employees	number.. 395	Work-in-process inventories, beginning of year	\$1,000.. 177 591
Establishments with 100 employees or more	number.. 92	Materials and supplies inventories, beginning of year	\$1,000.. 268 012
All employees	number.. 39 806	Total inventories, end of year	\$1,000.. 844 155
Total compensation ²	\$1,000.. 1 103 740	Finished goods inventories, end of year	\$1,000.. 352 570
Annual payroll	\$1,000.. 886 238	Work-in-process inventories, end of year	\$1,000.. 197 343
Total fringe benefits	\$1,000.. 217 502	Materials and supplies inventories, end of year	\$1,000.. 294 242
Production workers, average for year	number.. 34 491	Gross book value of total assets at beginning of year	\$1,000.. 1 778 543
Production workers on March 12	number.. 34 191	Total capital expenditures (new and used)	\$1,000.. 159 638
Production workers on May 12	number.. 34 476	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 28 903
Production workers on August 12	number.. 34 791	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 130 735
Production workers on November 12	number.. 34 506	Total retirements ²	\$1,000.. 38 624
Production-worker hours	1,000.. 67 457	Gross book value of total assets at end of year	\$1,000.. 1 899 557
Production-worker wages	\$1,000.. 684 628	Total depreciation during year ²	\$1,000.. 111 010
Total cost of materials	\$1,000.. 4 115 372	Total rental payments ²	\$1,000.. 29 026
Cost of materials, parts, containers, etc., consumed	\$1,000.. 3 709 489	Buildings and other structures rental payments ²	\$1,000.. 11 801
Cost of resales	\$1,000.. 267 024	Machinery and equipment rental payments ²	\$1,000.. 17 225
Cost of fuels	\$1,000.. 19 779	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 10 830
Cost of purchased electricity	\$1,000.. 69 816	Response coverage ratio ⁴	percent.. 80
Cost of contract work	\$1,000.. 49 264	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 52 263
Quantity of electricity purchased for heat and power	1,000 kWh.. 1 227 665	Response coverage ratio ⁴	percent.. 80
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 7 465
Total value of shipments	\$1,000.. 6 062 195	Response coverage ratio ⁴	percent.. 80
Primary products value of shipments	\$1,000.. 5 081 627	Cost of purchased legal services ³	\$1,000.. 5 261
Secondary products value of shipments	\$1,000.. 603 214	Response coverage ratio ⁴	percent.. 80
Total miscellaneous receipts	\$1,000.. 377 354	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 4 552
Value of resales	\$1,000.. 316 731	Response coverage ratio ⁴	percent.. 80
Contract receipts	\$1,000.. 20 559	Cost of purchased advertising services ³	\$1,000.. 3 697
Other miscellaneous receipts	\$1,000.. 40 064	Response coverage ratio ⁴	percent.. 80
Primary products specialization ratio	percent.. 89	Cost of purchased software and other data processing services ³	\$1,000.. 2 435
Value of primary products shipments made in all industries	\$1,000.. 5 707 810	Response coverage ratio ⁴	percent.. 80
Value of primary products shipments made in this industry	\$1,000.. 5 081 627	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 4 007
Value of primary products shipments made in other industries	\$1,000.. 626 183	Response coverage ratio ⁴	percent.. 80
Coverage ratio	percent.. 89		

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)				
321912, CUT STOCK, RESAWING LUMBER, & PLANING												
All establishments	1	1 395	487	39 806	886 238	34 491	67 457	684 628	1 978 033	4 115 372	6 062 195	159 638
Establishments with 1 to 4 employees	7	445	—	834	14 658	758	1 190	12 068	37 148	52 477	90 407	2 808
Establishments with 5 to 9 employees	4	227	—	1 532	29 788	1 265	2 099	23 550	63 399	88 777	152 927	5 570
Establishments with 10 to 19 employees	1	236	—	3 366	65 665	2 768	4 824	49 564	149 094	244 422	394 422	16 148
Establishments with 20 to 49 employees	1	261	261	8 225	173 647	7 049	13 346	130 814	468 992	834 939	1 295 771	33 781
Establishments with 50 to 99 employees	—	134	134	9 324	209 019	8 158	15 891	158 959	515 226	1 184 180	1 681 683	45 709
Establishments with 100 to 249 employees	—	83	83	12 596	292 794	10 953	22 446	225 047	607 815	1 333 331	1 931 276	40 571
Establishments with 250 to 499 employees	—	7	7	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	—	1	1	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	509	—	1 610	24 999	1 404	2 048	20 242	57 151	83 440	140 855	4 601

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)				
321912	Cut stock, resawing lumber, & planing	1 395	39 806	886 238	34 491	67 457	684 628	1 978 033	4 115 372	6 062 195	159 638
3219121	Hardwood lumber, not edge worked, manufactured from purchased lumber and edge worked	119	4 700	116 281	3 963	8 171	83 755	297 953	651 910	931 244	34 923
3219123	Softwood lumber, not edge worked, manufactured from purchased lumber and edge worked	154	7 849	185 583	6 698	13 033	133 836	526 123	1 621 897	2 137 027	34 858
3219125	Hardwood cut stock and dimension ..	268	14 577	310 348	12 900	25 716	249 167	592 255	693 090	1 280 194	37 168
3219127	Softwood cut stock and dimension ...	97	5 371	132 524	4 616	9 700	105 481	248 337	725 319	978 765	27 100
3219129	Sawn wood fence stock, wood lath, and contract resawing and planing ..	71	1 567	34 101	1 336	2 406	26 929	67 616	58 606	125 398	6 251

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)
321912	Cut stock, resawn lumber, and planed lumber	N	X	X	5 707 810	N	X	X	N
3219121	Hardwood lumber, not edge worked, manufactured from purchased lumber and edge worked	N	X	X	949 501	N	X	X	N
32191211	Hardwood lumber, not edge worked, manufactured from purchased lumber and edge worked	N	X	X	746 372	N	X	X	N
3219121111	Beech rough lumber, not edge worked, manufactured from purchased lumber	5	X	X	1 942	N	X	X	N
3219121121	Oak rough lumber, not edge worked, manufactured from purchased lumber	73	X	\$137.6	134 559	N	X	N	N
3219121131	Other hardwood rough lumber, not edge worked, manufactured from purchased lumber	75	X	\$324.5	252 067	N	X	N	N
3219121141	Hardwood dressed lumber, not edge worked, manufactured from purchased lumber	48	X	\$294.2	329 156	N	X	N	N
3219121151	Hardwood lumber, edge worked (tongued, grooved, rabbeted, etc.)	24	X	S	28 648	N	X	N	N
3219121Y	Hardwood lumber, not edge worked, manufactured from purchased lumber and edge worked, nsk	N	X	X	203 129	N	X	X	N
3219121YVV	Hardwood lumber, not edge worked, manufactured from purchased lumber and edge worked, nsk	N	X	X	203 129	N	X	X	N
3219123	Softwood lumber, not edge worked, manufactured from purchased lumber and edge worked	N	X	X	1 746 790	N	X	X	N
32191231	Softwood lumber, not edge worked, manufactured from purchased lumber and edge worked	N	X	X	1 202 869	N	X	X	N
3219123111	Softwood rough lumber, less than 2 inches in nominal thickness, not edge worked, manufactured from purchased lumber	25	X	D	D	N	X	N	N
3219123121	Softwood rough 2-inch lumber, 2 inches in nominal thickness only, not edge worked, manufactured from purchased lumber	16	X	D	D	N	X	N	N
3219123131	Softwood rough lumber and timbers, more than 2 inches in nominal thickness, not edge worked, manufactured from purchased lumber	10	X	S	13 214	N	X	N	N
3219123141	Softwood dressed lumber, less than 2 inches in nominal thickness, not edge worked, manufactured from purchased lumber	48	X	\$384.0	220 235	N	X	N	N
3219123151	Softwood dressed 2-inch lumber, 2 inches in nominal thickness only, not edge worked, manufactured from purchased lumber	46	X	\$493.9	206 542	N	X	N	N
3219123161	Softwood dressed lumber and timbers, more than 2 inches in nominal thickness, not edge worked, manufactured from purchased lumber	28	X	\$151.2	80 402	N	X	N	N
3219123171	Softwood lumber, edge worked (tongued, grooved, rabbeted, etc.)	49	X	\$407.4	224 813	N	X	N	N
3219123Y	Softwood lumber, not edge worked, manufactured from purchased lumber and edge worked, nsk	N	X	X	543 921	N	X	X	N
3219123YVV	Softwood lumber, not edge worked, manufactured from purchased lumber and edge worked, nsk	N	X	X	543 921	N	X	X	N
3219125	Hardwood cut stock and dimension	N	X	X	1 250 186	N	X	X	845 149
32191251	Hardwood furniture cut stock, rough or surfaced, cut to size	N	X	X	181 691	N	X	X	N
3219125111	Hardwood furniture cut stock, rough or surfaced, cut to size, for cabinets	24	X	S	79 415	N	X	N	N
3219125115	Hardwood furniture cut stock, rough or surfaced, cut to size, not for cabinets	47	X	\$86.1	102 276	N	X	N	N
32191252	Hardwood furniture dimension, semimachined, including edge and face glued parts	N	X	X	178 555	N	X	X	N
3219125221	Hardwood furniture dimension, semimachined, including edge and face glued parts, for cabinets	22	X	\$27.7	52 167	N	X	N	N
3219125225	Hardwood furniture dimension, semimachined, including edge and face glued parts, not for cabinets	36	X	\$63.5	126 388	N	X	N	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)
321912	Cut stock, resawn lumber, and planed lumber—Con.								
3219125	Hardwood cut stock and dimension—Con.								
32191253	Hardwood furniture dimension, fully machined, ready for assembly	N	X	X	383 990	N	X	X	N
3219125331	Hardwood furniture dimension, fully machined, ready for assembly, for cabinets	23	X	S	237 281	N	X	N	N
3219125335	Hardwood furniture dimension, fully machined, ready for assembly, not for cabinets	60	X	S	146 709	N	X	N	N
32191254	Hardwood industrial cut stock and dimension, and compression-modified or densified wood	N	X	X	239 170	N	X	X	N
3219125441	Hardwood industrial cut stock, rough or surfaced, cut to size	41	X	X	109 621	36	X	X	42 766
3219125444	Hardwood industrial dimension, semimachined, including edge and face glued parts	11	X	X	D	16	X	X	11 073
3219125447	Hardwood industrial dimension, fully machined, ready for assembly	20	X	S	114 661	30	X	S	124 116
3219125451	Compression-modified or densified wood (whether or not impregnated with synthetic resin)	1	X	X	D	3	X	X	1 301
3219125Y	Hardwood cut stock and dimension, nsk	N	X	X	266 780	N	X	X	N
3219125YWV	Hardwood cut stock and dimension, nsk	N	X	X	266 780	N	X	X	65 506
3219127	Softwood cut stock and dimension	N	X	X	1 005 658	N	X	X	N
32191271	Softwood cut stock and dimension	N	X	X	952 537	N	X	X	N
3219127111	Softwood furniture cut stock	25	X	S	91 603	37	X	P58.8	59 931
3219127121	Softwood industrial cut stock	86	X	S	758 801	107	X	P586.1	528 701
3219127131	Softwood semimachined and fully machined furniture and industrial dimension	36	X	X	102 133	N	X	X	N
3219127Y	Softwood cut stock and dimension, nsk	N	X	X	53 121	N	X	X	N
3219127YWV	Softwood cut stock and dimension, nsk	N	X	X	53 121	N	X	X	N
3219129	Sawn wood fence stock, wood lath, and contract resawing and planing	N	X	X	138 399	N	X	X	N
32191291	Sawn wood fence stock, wood lath, and contract resawing and planing	N	X	X	135 416	N	X	X	N
3219129111	Sawn wood fence pickets, posts, and rails not assembled into fence sections	20	X	X	45 425	31	X	X	31 014
3219129121	Wood lath	11	X	X	12 140	12	X	X	10 898
3219129131	Receipts for contract resawing and planing	92	X	X	77 851	N	X	X	N
3219129Y	Sawn wood fence stock, wood lath, and contract resawing and planing, nsk	N	X	X	2 983	N	X	X	N
3219129YWV	Sawn wood fence stock, wood lath, and contract resawing and planing, nsk	N	X	X	2 983	N	X	X	N
321912W	Cut stock, resawn lumber, and planed lumber, nsk, total	N	X	X	617 276	N	X	X	N
321912WY	Cut stock, resawn lumber, and planed lumber, nsk, total	N	X	X	617 276	N	X	X	N
321912WYWV	Cut stock, resawn lumber, and planed lumber, nsk, for nonadministrative-record establishments	N	X	X	481 488	N	X	X	N
321912WYWY	Cut stock, resawn lumber, and planed lumber, nsk, for administrative-record establishments	N	X	X	135 788	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
3219121	HARDWOOD LUMBER, NOT EDGE WORKED, MANUFACTURED FROM PURCHASED LUMBER AND EDGE WORKED		
	United States	949 501	N
	Alabama	3 937	N
	Arkansas	15 788	N
	California	13 182	N
	Georgia	18 876	N
	Indiana	40 869	N
	Kentucky	38 540	N
	Michigan	51 889	N
	Minnesota	10 631	N
	Mississippi	73 128	N
	Missouri	11 143	N
	North Carolina	36 101	N
	Ohio	58 096	N
	Oregon	2 394	N
	Pennsylvania	152 182	N
	South Carolina	4 072	N
	Tennessee	24 129	N
	Texas	13 191	N
	Virginia	36 334	N
	Washington	20 543	N
West Virginia	50 443	N	
Wisconsin	131 646	N	
3219123	SOFTWOOD LUMBER, NOT EDGE WORKED, MANUFACTURED FROM PURCHASED LUMBER AND EDGE WORKED		
	United States	1 746 790	N
	Alabama	130 995	N
	Arkansas	31 576	N
	California	134 257	N
	Florida	73 523	N
	Georgia	103 317	N
	Idaho	243 538	N
	Maine	33 260	N
	Minnesota	6 322	N
	Mississippi	74 545	N
	Montana	39 995	N
	New Hampshire	17 232	N
	North Carolina	54 399	N
	Ohio	7 624	N
	Oregon	179 298	N
	South Carolina	18 843	N
	Tennessee	36 082	N
	Texas	121 653	N
	Utah	17 130	N
	Virginia	47 527	N
Washington	90 253	N	
Wisconsin	15 547	N	
3219125	HARDWOOD CUT STOCK AND DIMENSION		
	United States	1 250 186	845 149
	Alabama	7 170	5 877
	Arkansas	34 469	10 151
	California	76 722	8 319
	Illinois	12 914	10 879
	Indiana	115 814	113 750
	Kentucky	95 753	61 883
	Maine	15 305	19 454
	Michigan	17 579	21 023
	Mississippi	3 416	33 473
	Missouri	22 400	18 494
	New York	43 070	39 622
	North Carolina	135 681	103 684
	Ohio	60 863	42 226
	Pennsylvania	128 880	84 078
	South Carolina	18 110	15 876
	Tennessee	110 789	93 121
	Texas	11 105	3 170
	Vermont	11 759	10 522
	Virginia	37 198	22 722
Washington	56 974	18 689	
West Virginia	54 549	N	
Wisconsin	41 423	18 575	
3219127	SOFTWOOD CUT STOCK AND DIMENSION		
	United States	1 005 658	N
	California	145 076	N
	Idaho	70 589	N
	Michigan	5 778	N
	New York	2 087	N
	North Carolina	27 949	N
	Oregon	341 710	N
	South Dakota	5 548	N
	Tennessee	16 176	N
	Texas	53 007	N
	Washington	169 356	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
3219129	SAWN WOOD FENCE STOCK, WOOD LATH, AND CONTRACT RESAWING AND PLANING		
	United States	138 399	N
	California	22 473	N
	Florida	2 635	N
	Maine	2 170	N
	Michigan	2 976	N
	Montana	9 272	N
	North Carolina	10 663	N
	Oregon	19 453	N
	Texas	7 286	N
	Washington	14 983	N
	West Virginia	7 886	N
	Wisconsin	3 868	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)
321912	CUT STOCK, RESAWING LUMBER, & PLANING				
11311000	Stumpage cost (cost of timber, excluding land, cut and consumed at same establishment)	X	27 333	X	N
11331015	Hardwood logs and bolts	S	105 919	N	N
11331017	Softwood logs and bolts	S	117 982	N	N
32100023	Hardwood rough lumber	⁹ 906.9	644 687	N	N
32100029	Softwood rough lumber	2 418.5	982 527	N	N
32100027	Hardwood dressed lumber	S	171 834	N	N
32100033	Softwood dressed lumber	S	754 085	N	N
00970099	All other materials and components, parts, containers, and supplies	X	123 242	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	781 880	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

321912 CUT STOCK, RESAWING LUMBER, AND PLANING

This U.S. industry comprises establishments primarily engaged in one or more of the following: (1) manufacturing dimension lumber from purchased lumber; (2) manufacturing dimension stock (i.e., shapes) or cut stock; (3) resawing the output of sawmills; and (4) planing purchased lumber. These establishments generally use wood-working machinery, such as jointers, planers, lathes, and routers to shape wood.

The data published with NAICS code 321912 include the following SIC industries:

- 2421 Sawmills and planing mills, general (pt)
- 2426 Hardwood dimension and flooring mills (pt)
- 2439 Structural wood members, n.e.c. (pt)
- 2499 Wood products, n.e.c. (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 321912 include establishments primarily engaged in the manufacture of hardwood dimension made from logs and bolts, lumber members made from purchased lumber, and semi-machined and fully-machined softwood dimension lumber, but do not include establishments primarily engaged in the manufacture of staves from purchased lumber. 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
\$ 3219121111	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219121121	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219121131	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219121141	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219123111	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219123121	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219123131	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219123141	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219123151	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.
\$ 3219123161	This product code is primary to more than one industry. For a list of product codes that are primary to more than one industry, see "1997 Economic Census, Numerical List of Manufactured and Mineral Products," Appendix D.

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
3211131	24211 pt	24211 pt	3212117	24353	24353	3212197	24936	24936
321113111	2421111	2421161 pt	3212117111	2435331	2435331	3212197111	2493612	2493612
3211131121	2421115	2421163 pt	3212117291	2435398	2435398	3212197121	2493616	2493616
3211131131	2421121	2421165 pt	3212117YWW	2435300 pt	2435300	3212197131	2493617	2493617
3211131141	2421125	2421177 pt	3212117YWW	2435300 pt	2435311	3212197YWW	2493600	2493600
3211131YVV	2421100 pt	2421100 pt	321211W	24350	24350	3212198	24937	24937
3211133	24212 pt	24212 pt	321211WYWW	2435000	2435000	3212198111	2493721	2493721
3211133111	2421241	2421212 pt	321211WYWW	2435002	2435002	3212198121	2493731	2493731
3211133121	2421244	2421213 pt	3212121	24364	24364	3212198YWW	2493700	2493700
3211133131	2421247	2421215 pt	3212121100	2436400	2436400	321219W	24930	24930
3211133241	2421251	2421233 pt	3212123	24365	24365	321219WYWW	2493000	2493000
3211133351	2421254	2421235 pt	3212123111	2436501	2436501	321219WYWW	2493002	2493002
3211133461	2421257	2421237 pt	3212123331	2436505	2436505	3219111	24311	24311
3211133YVV	2421200 pt	2421200 pt	3212123331	2436511	2436511	3219111111	2431131	2431131
3211135	24215	24215	3212123441	2436521	2436521	3219111121	2431132	2431132
3211135111	2421516	2421516	3212123451	2436523	2436523	3219111231	2431135	2431135
3211135121	2421522	2421522	3212123YVV	2436500	2436500	3219111241	2431136	2431136
3211135231	2421518	2421518	3212125	24366	24366	3219111351	2431142	2431141 pt
3211135241	2421524	2421524	3212125111	2436607	2436607	3219111361	2431143	2431141 pt
3211135YVV	2421500	2421500	3212125121	2436611	2436611	3219111391 pt	2431191 pt	2431134
3211137 pt.	24218 pt	24218 pt	3212125131	2436613	2436613	3219111391 pt	2431191 pt	2431145
3211137 pt.	24219 pt	24219 pt	3212125141	2436615	2436615	3219111YVV	2431100	2431100
3211137 pt.	24290 pt	24290 pt	3212125151	2436617	2436617	3219113	24312	24312
3211137111	2421817	2421817	3212125YVV	2436600	2436600	3219113111	2431209	2431209
3211137121	2421813	2421813	3212127	24367	24367	3219113121	2431215	2431215
3211137131 pt	2429011 pt	2429004	3212127111	2436703	2436703	3219113YVV	2431200	2431200
3211137131 pt	2429011 pt	2429007	3212127121	2436721	2436721	3219115	24313	24313
3211137131 pt	2429011 pt	2429009	3212127191 pt	2436727 pt	2436723	321911511	2431313	2431313
3211137141	2421911	2421911	3212127191 pt	2436727 pt	2436725	3219115121	2431315	2431315
3211137YVV pt	2421800 pt	2421800 pt	3212127YVV	2436700	2436700	3219115YVV	2431300	2431300
3211137YVV pt	2421900 pt	2421900 pt	3212129	24363	24363	3219117	24314	24314
321113W pt.	24210 pt	24210 pt	3212129111	2436331	2436331	3219117111	2431411	2431411
321113W pt.	24290 pt	24290 pt	3212129191	2436398	2436398	3219117115	2431413	2431413
321113W pt.	24390 pt	24390 pt	3212129YVV pt	2436300 pt	2436300	3219117121	2431419	2431419
321113WYVV pt.	2421000 pt	2421000 pt	3212129YVV pt	2436300 pt	2436311	3219117131	2431431	2431431
321113WYVV pt.	2429000 pt	2429000 pt	321212W	24360	24360	3219117135	2431433	2431433
321113WYVV pt.	2439000 pt	2439000 pt	321212WYWW	2436000	2436000	3219117141	2431435	2431435
321113WYVV pt.	2439085	2439033 pt	321212WYWW	2436002	2436002	3219117145	2431437	2431437
321113WYVV pt.	2421002 pt	2421002 pt	3212130	24390 pt	24390 pt	3219117151	2431441	2431441
321113WYVV pt.	2429002 pt	2429002 pt	3212130111	2439011	2439098 pt	3219117155	2431445	2431445
321113WYVV pt.	2439002 pt	2439002 pt	3212130221	2439015	2439031	3219117161 pt	2431449 pt	2431446
3211141	24912	24912	3212130231	2439021	2439098 pt	3219117161 pt	2431449 pt	2431448
3211141111	2491201	2491201	3212130241 pt	2439025 pt	2439035	3219117171	2431461	2431400 pt
3211141121	2491203	2491203	3212130241 pt	2439025 pt	2439098 pt	3219117YVV	2431400	2431400 pt
3211141131 pt	2491208 pt	2491205	3212130YVV	2439000 pt	2439000 pt	3219119	24315	24315
3211141131 pt	2491208 pt	2491207	3212130YVV	2439002 pt	2439002 pt	3219119111	2431561	2431561
3211141141	2491209	2491209	3212140	24390 pt	24390 pt	3219119121	2431584	2431584
3211141151	2491212	2491212	3212140111 pt	2439061 pt	2439051 pt	3219119131	2431585	2431585
3211141161	2491214	2491214	3212140111 pt	2439061 pt	2439098 pt	3219119141	2431587	2431587
3211141171	2491216	2491216	3212140121	2439065	2439098 pt	3219119151	2431588	2431597 pt
3211141YVV	2491200	2491200	3212140131 pt	2439071 pt	2439051 pt	3219119191 pt	2431591 pt	2431575
3211145	24913	24913	3212140131 pt	2439071 pt	2439098 pt	3219119191 pt	2431591 pt	2431581
3211145111	2491302	2491302	3212140YVV	2439000 pt	2439000 pt	3219119191 pt	2431591 pt	2431597 pt
3211145121	2491305	2491305	3212140YVV	2439002 pt	2439002 pt	3219119YVV	2431500	2431500
3211145131	2491307	2491307	3212191	24931	24931	321911W	24310 pt	24310 pt
3211145141	2491309	2491309	3212191111	2493111 pt	2493120	321911WYVV	2431000 pt	2431000 pt
3211145151	2491312	2491312	3212191111 pt	2493111 pt	2493121 pt	321911WYVV	2431002 pt	2431002 pt
3211145161	2491314	2491314	3212191111 pt	2493111 pt	2493121 pt	3219121	24211 pt	24211 pt
3211145171	2491317	2491317	3212191221 pt	2493115 pt	2493103	321912111	2421135	2421161 pt
3211145191	2491321	2491321	3212191221 pt	2493115 pt	2493103	3219121121	2421141	2421163 pt
3211145YVV	2491300	2491300	3212191291	2493191	2493121 pt	3219121131	2421145	2421165 pt
3211149	24919	24919	3212191YVV	2493100	2493100	3219121141	2421151	2421177 pt
3211149111	2491905	2491905	3212192	24932	24932	3219121151 pt	2421155 pt	2421161 pt
3211149121	2491907	2491907	3212192111	2493205	2493205	3219121151 pt	2421155 pt	2421163 pt
3211149191	2491911	2491911	3212192121	2493207	2493207	3219121151 pt	2421155 pt	2421165 pt
3211149YVV	2491900	2491900	3212192191 pt	2493291 pt	2493209	3219121YVV	2421100 pt	2421100 pt
321114W	24910	24910	3212192191 pt	2493291 pt	2493221	3219123	24212 pt	24212 pt
321114WYVV	2491000	2491000	3212192YVV	2493200	2493200	3219123111	2421264	2421212 pt
321114WYVV	2491002	2491002	3212193	24933	24933	3219123121	2421267	2421213 pt
3212111	24354	24354	3212193111	2493311 pt	2493314 pt	3219123131	2421271	2421215 pt
3212111111	2435419	2435419	3212193111 pt	2493311 pt	2493316 pt	3219123141	2421274	2421233 pt
3212111221	2435415	2435415	3212193191 pt	2493391 pt	2493316 pt	3219123151	2421277	2421235 pt
3212111231	2435417	2435417	3212193191 pt	2493391 pt	2493316 pt	3219123161	2421281	2421237 pt
3212111241	2435421	2435421	3212193YVV	2493300	2493300	3219123171 pt	2421284 pt	2421212 pt
3212111251	2435427	2435427	3212194	24934	24934	3219123171 pt	2421284 pt	2421213 pt
3212111261	2435431	2435431	3212194111	2493412	2493412	3219123171 pt	2421284 pt	2421215 pt
3212111YVV	2435400	2435400	3212194121	2493414	2493414	3219123171 pt	2421284 pt	2421231
3212113	24351	24351	3212194131	2493416	2493416	3219123YVV	2421200 pt	2421200 pt
3212113111	2435101	2435101	3212194141	2493417	2493417	3219125	24262	24262
3212113221	2435105	2435105	3212194151	2493418	2493418	3219125111	2426231	2426224 pt
3212113231	2435107	2435107	3212194161	2493419	2493419	3219125115	2426241	2426224 pt
3212113291	2435147	2435147	3212194YVV	2493400	2493400	3219125221	2426233	2426251 pt
3212113YVV	2435100	2435100	3212195	24935	24935	3219125225	2426243	2426251 pt
3212115	24352	24352	3212195100	2493500	2493500	3219125331	2426235	2426281 pt
3212115100	2435200	2435200				3219125335	2426245	2426281 pt
						3219125441	2426283	2426283

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVV	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVV pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVV pt	2439081	2439033 pt	3219207YVV pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVV pt	2421002 pt	2421002 pt	3219207YVV pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVV pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVV pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVV pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVV pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVV pt	2441000	2441000	3219990144	2499451	2499451
3219181YVV	2431600	2431600	321920WYVV pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVV pt	2449000 pt	2449000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVV pt	2499000 pt	2499000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVV pt	2429002 pt	2429002 pt	3219990157	2499462	2499462
3219183YVV	2431700	2431700	321920WYVV pt	2441002	2441002	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVV pt	2448002	2448002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVV pt	2449002	2449002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVV pt	2499002 pt	2499002 pt	3219990171	2499489	2499489
3219185121	2431825	2431825	3219911	24511	24511	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911111	2451111	2451111	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911121 pt	2451112 pt	2451113	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451115	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911351	2451118	2451118	3219990191 pt	2499498 pt	2499498 pt
3219185YVV pt	2421800 pt	2421800 pt	3219911YVV	2451100	2451100	3219990191 pt	3131033	3131061 pt
3219185YVV pt	2431800	2431800	3219915	24512	24512	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915111	2451222	2451222	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915121	2451230	2451230	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915YVV	2451200	2451200	3219990YVV pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	321991W	24510	24510	3219990YVV pt	2421000 pt	2421000 pt
3219187241	2426131	2426131	321991WYVV	2451000	2451000	3219990YVV pt	2421800 pt	2421800 pt
3219187251	2426141	2426141	321991WYVV	2451002	2451002	3219990YVV pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	3219921	24521	24521	3219990YVV pt	2429000 pt	2429000 pt
3219187YVV	2426100	2426100	3219921111	2452173	2452173	3219990YVV pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921121	2452175	2452175	3219990YVV pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921YVV	2452100	2452100	3219990YVV pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219923	24522	24522	3219990YVV pt	2499900 pt	2499900 pt
321918WYVV pt	2421000 pt	2421000 pt	3219923111	2452217	2452217	3219990YVV pt	2499100 pt	2499100 pt
321918WYVV pt	2426000 pt	2426000 pt	3219923121	2452219	2452219	3219990YVV pt	2499400 pt	2499400 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923131	2452223	2452223	3219990YVV pt	2499900 pt	2499900 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499100 pt	2499100 pt
321918WYVV pt	2426002 pt	2426002 pt				3219990YVV pt	2499400 pt	2499400 pt

Other Millwork (Including Flooring)

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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)				
321918	Other millwork (including flooring)	1 412	1 463	37 742	858 106	31 394	60 691	631 477	1 816 581	2 686 110	4 462 759	104 550
242130	Sawmills & planing mills, general (pt)	N	5	91	2 695	62	123	1 062	5 020	14 161	19 285	105
242620	Hardwood dimension & flooring mills (pt)	N	127	10 521	235 924	9 233	18 243	182 115	580 983	810 085	1 368 123	36 565
243120	Millwork (pt)	N	1 331	27 130	619 487	22 099	42 325	448 300	1 230 578	1 861 864	3 075 351	67 880

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)				
321918, OTHER MILLWORK (INCLUDING FLOORING)												
United States	1	1 463	396	37 742	858 106	31 394	60 691	631 477	1 816 581	2 686 110	4 462 759	104 550
Alabama	1	37	14	1 813	37 758	1 445	2 544	28 080	81 610	104 692	191 100	4 933
Arkansas	2	22	10	1 277	22 965	1 116	1 999	17 869	63 955	60 611	118 678	5 524
California	-	151	50	4 343	101 108	3 640	7 079	75 763	207 438	412 433	609 721	5 572
Colorado	2	38	5	460	14 703	328	721	8 293	32 327	21 722	53 966	1 203
Connecticut	1	27	5	284	9 730	213	462	6 086	15 724	16 605	32 597	516
Florida	3	71	7	685	14 498	554	977	10 187	23 667	28 449	51 759	1 347
Georgia	1	59	23	1 825	44 321	1 476	2 936	30 425	87 498	128 291	215 613	6 020
Idaho	-	10	3	805	16 028	751	1 488	14 277	32 918	111 927	141 444	297
Illinois	2	48	10	690	21 777	553	1 122	15 198	33 988	44 721	78 323	1 262
Indiana	-	45	17	1 215	27 970	1 037	1 996	20 850	58 119	80 110	136 755	3 220
Kansas	4	9	2	578	9 724	516	988	8 045	19 092	26 054	44 944	712
Kentucky	-	21	6	908	18 790	677	1 353	14 537	51 171	51 842	100 267	2 921
Louisiana	-	9	2	139	2 727	118	2 111	6 193	6 193	14 158	20 271	742
Maryland	5	18	5	456	9 950	363	697	6 886	16 720	22 668	39 278	692
Massachusetts	4	20	2	175	5 775	116	236	3 043	10 281	9 520	19 930	783
Michigan	2	47	9	858	20 517	703	1 420	14 490	48 807	56 450	105 060	4 241
Minnesota	-	20	5	371	9 409	302	549	6 391	21 287	23 990	44 455	696
Mississippi	-	15	6	543	11 533	477	963	9 311	19 883	27 855	47 908	1 597
Missouri	-	25	8	1 321	30 023	1 184	2 262	25 872	68 038	99 101	167 095	1 720
New Hampshire	-	10	2	115	3 789	82	174	2 324	6 518	8 205	14 733	339
New Mexico	2	15	7	382	8 419	332	614	6 247	18 590	37 631	56 870	824
New York	2	66	8	700	19 300	537	1 033	13 569	35 358	39 275	74 502	1 482
North Carolina	3	60	19	1 559	37 780	1 309	2 468	26 978	84 513	98 277	176 185	7 668
Ohio	2	61	14	1 350	30 801	1 076	2 057	21 445	62 397	78 970	142 345	2 945
Oklahoma	1	15	3	219	4 058	176	310	2 739	8 418	7 537	16 061	478
Oregon	2	25	13	1 405	34 783	1 194	2 270	25 818	60 684	134 388	196 254	3 038
Pennsylvania	2	79	18	1 254	26 922	935	1 708	18 697	52 382	65 215	117 253	2 382
South Carolina	3	25	5	321	6 035	257	472	4 199	10 009	11 137	20 729	968
Tennessee	-	34	15	3 201	69 584	2 789	5 620	51 771	180 625	310 498	487 517	11 640
Texas	1	95	26	2 161	44 732	1 872	3 483	33 922	89 841	133 577	218 584	4 094
Utah	3	24	4	221	4 019	191	326	3 126	7 856	7 762	15 569	263
Virginia	4	43	18	1 494	35 600	1 184	2 316	24 304	80 951	110 976	191 569	5 718
Washington	1	31	8	698	17 629	593	1 298	13 078	35 895	55 028	90 193	4 196
West Virginia	-	15	6	906	19 094	798	1 661	16 497	48 292	73 532	119 076	4 122
Wisconsin	2	49	16	1 417	31 959	1 204	2 422	23 285	71 814	87 349	157 599	7 766

* 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
321918, OTHER MILLWORK (INCLUDING FLOORING)		321918, OTHER MILLWORK (INCLUDING FLOORING)—Con.	
Companies ¹	number.. 1 412	Value added	\$1,000.. 1 816 581
All establishments	number.. 1 463	Total inventories, beginning of year	\$1,000.. 560 056
Establishments with 1 to 19 employees	number.. 1 067	Finished goods inventories, beginning of year	\$1,000.. 156 460
Establishments with 20 to 99 employees	number.. 307	Work-in-process inventories, beginning of year	\$1,000.. 149 936
Establishments with 100 employees or more	number.. 89	Materials and supplies inventories, beginning of year	\$1,000.. 253 660
All employees	number.. 37 742	Total inventories, end of year	\$1,000.. 627 439
Total compensation ²	\$1,000.. 1 055 326	Finished goods inventories, end of year	\$1,000.. 176 997
Annual payroll	\$1,000.. 858 106	Work-in-process inventories, end of year	\$1,000.. 169 331
Total fringe benefits	\$1,000.. 197 220	Materials and supplies inventories, end of year	\$1,000.. 281 111
Production workers, average for year	number.. 31 394	Gross book value of total assets at beginning of year	\$1,000.. 1 122 968
Production workers on March 12	number.. 31 036	Total capital expenditures (new and used)	\$1,000.. 104 550
Production workers on May 12	number.. 31 469	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 22 500
Production workers on August 12	number.. 31 520	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 82 050
Production workers on November 12	number.. 31 551	Total retirements ²	\$1,000.. 27 272
Production-worker hours	1,000.. 60 691	Gross book value of total assets at end of year	\$1,000.. 1 200 246
Production-worker wages	\$1,000.. 631 477	Total depreciation during year ²	\$1,000.. 78 691
Total cost of materials	\$1,000.. 2 686 110	Total rental payments ²	\$1,000.. 38 558
Cost of materials, parts, containers, etc., consumed	\$1,000.. 2 459 797	Buildings and other structures rental payments ²	\$1,000.. 18 244
Cost of resales	\$1,000.. 147 091	Machinery and equipment rental payments ²	\$1,000.. 20 314
Cost of fuels	\$1,000.. 7 818	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 381
Cost of purchased electricity	\$1,000.. 47 402	Response coverage ratio ⁴	percent.. 62
Cost of contract work	\$1,000.. 24 002	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 20 666
Quantity of electricity purchased for heat and power	1,000 kWh.. 903 561	Response coverage ratio ⁴	percent.. 62
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 4 406
Total value of shipments	\$1,000.. 4 462 759	Response coverage ratio ⁴	percent.. 62
Primary products value of shipments	\$1,000.. 3 833 479	Cost of purchased legal services ³	\$1,000.. 1 795
Secondary products value of shipments	\$1,000.. 405 175	Response coverage ratio ⁴	percent.. 62
Total miscellaneous receipts	\$1,000.. 224 105	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 607
Value of resales	\$1,000.. 189 164	Response coverage ratio ⁴	percent.. 62
Contract receipts	\$1,000.. 12 209	Cost of purchased advertising services ³	\$1,000.. 7 307
Other miscellaneous receipts	\$1,000.. 22 732	Response coverage ratio ⁴	percent.. 62
Primary products specialization ratio	percent.. 90	Cost of purchased software and other data processing services ³	\$1,000.. 906
Value of primary products shipments made in all industries	\$1,000.. 4 294 155	Response coverage ratio ⁴	percent.. 62
Value of primary products shipments made in this industry	\$1,000.. 3 833 479	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 2 502
Value of primary products shipments made in other industries	\$1,000.. 460 676	Response coverage ratio ⁴	percent.. 62
Coverage ratio	percent.. 89		

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)				
321918, OTHER MILLWORK (INCLUDING FLOORING)												
All establishments	1	1 463	396	37 742	858 106	31 394	60 691	631 477	1 816 581	2 686 110	4 462 759	104 550
Establishments with 1 to 4 employees	8	515	—	1 165	24 129	948	1 544	18 704	47 689	63 352	111 210	2 839
Establishments with 5 to 9 employees	5	288	—	1 929	40 314	1 562	2 585	30 532	76 633	88 135	165 188	4 030
Establishments with 10 to 19 employees	2	264	—	3 592	83 349	2 876	5 116	60 714	163 153	178 876	340 966	10 240
Establishments with 20 to 49 employees	1	221	221	6 700	155 200	5 279	9 639	102 599	294 980	394 986	690 870	20 148
Establishments with 50 to 99 employees	1	86	86	6 054	137 250	5 092	10 413	101 024	289 243	439 484	719 354	14 100
Establishments with 100 to 249 employees	1	69	69	10 059	233 002	8 383	16 996	167 906	504 470	723 086	1 209 492	30 910
Establishments with 250 to 499 employees	—	15	15	5 289	118 903	4 720	9 511	99 412	308 069	625 192	921 560	12 429
Establishments with 500 to 999 employees	—	5	5	2 954	65 959	2 534	4 887	50 586	132 344	172 999	304 119	9 854
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—	—
Administrative records ²	9	580	—	2 340	42 216	1 910	2 827	31 346	79 483	107 363	187 419	4 966

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)				
321918	Other millwork (including flooring)	1 463	37 742	858 106	31 394	60 691	631 477	1 816 581	2 686 110	4 462 759	104 550
3219181	Wood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc. ...	226	10 967	251 683	9 348	18 884	196 208	520 019	1 071 160	1 577 409	31 104
3219183	Prefinished wood moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	15	276	6 483	220	447	4 283	15 978	16 778	32 636	580
3219185	Other wood millwork products, including stairwork, exterior millwork, and softwood flooring	431	12 075	287 009	9 487	18 108	191 686	552 711	591 796	1 138 286	27 994
3219187	Hardwood flooring	97	10 372	233 103	9 104	18 006	179 879	576 122	805 518	1 358 695	36 244

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)
321918	Other millwork (including flooring)	N	X	X	4 294 155	N	X	X	N
3219181	Wood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	N	X	X	1 516 751	N	X	X	1 194 825
32191811	Wood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	N	X	X	1 366 504	N	X	X	N
3219181111	Pine wood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	78	X	X	840 786	89	X	X	678 402
3219181121	Other softwood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	37	X	X	87 813	60	X	X	113 503
3219181131	Hardwood moldings, except prefinished moldings made from purchased moldings, including lauan and hardwood covered with metal, plastics, etc.	169	X	X	437 905	174	X	X	279 380
3219181Y	Wood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc., nsk	N	X	X	150 247	N	X	X	N
3219181YVV	Wood moldings, except prefinished moldings made from purchased moldings, including moldings covered with metal, plastics, etc., nsk	N	X	X	150 247	N	X	X	123 540
3219183	Prefinished wood moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	N	X	X	62 715	N	X	X	152 015
32191831	Prefinished wood moldings made from purchased moldings, including moldings covered with metal, plastics, etc.	N	X	X	41 998	N	X	X	N
3219183111	Prefinished softwood moldings made from purchased moldings, including softwood covered with metal, plastics, etc.	20	X	X	17 060	28	X	X	98 959
3219183121	Prefinished hardwood moldings made from purchased moldings, including lauan and hardwood covered with metal, plastics, etc.	28	X	X	24 938	29	X	X	15 250
3219183Y	Prefinished wood moldings made from purchased moldings, including moldings covered with metal, plastics, etc., nsk	N	X	X	20 717	N	X	X	N
3219183YVV	Prefinished wood moldings made from purchased moldings, including moldings covered with metal, plastics, etc., nsk	N	X	X	20 717	N	X	X	37 806
3219185	Other wood millwork products, including stairwork, exterior millwork, and softwood flooring	N	X	X	1 161 378	N	X	X	N
32191851	Other wood millwork products, including stairwork, exterior millwork, and softwood flooring	N	X	X	968 941	N	X	X	N
3219185111	Softwood stairwork, including treads, risers, balusters, brackets, crooks, newels, rails, etc.	62	X	X	83 459	74	X	X	110 201
3219185121	Hardwood stairwork, including treads, risers, balusters, brackets, crooks, newels, rails, etc.	142	X	X	250 744	133	X	X	172 048
3219185131	Exterior wood millwork, including porch columns, porch rails, newels, trellises, and entrances	43	X	X	112 197	40	X	X	62 940
3219185141	Nonstandard or specialty softwood moldings, carvings, and ornaments	24	X	X	19 303	29	X	X	50 548
3219185151	Nonstandard or specialty hardwood moldings, carvings, and ornaments	66	X	X	64 169	78	X	X	75 283
3219185161	Softwood flooring	16	X	X	19 595	15	X	X	13 308
3219185191	Other wood millwork products, n.e.c., including shutters and interior millwork	244	X	X	419 474	N	X	X	N
3219185Y	Other wood millwork products, including stairwork, exterior millwork, and softwood flooring, nsk	N	X	X	192 437	N	X	X	N
3219185YVV	Other wood millwork products, including stairwork, exterior millwork, and softwood flooring, nsk	N	X	X	192 437	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)
321918	Other millwork (including flooring)—Con.								
3219187	Hardwood flooring	N	X	X	1 253 775	N	X	X	659 368
32191871	Oak flooring	N	X	X	810 657	N	X	X	N
3219187111	Oak flooring (three-quarter inch, one-half inch, and three-eighth inch nominally thick tongue and groove (T&G) and end matched (EM) strip; and five-sixteenth inch nominally thick square edge strip)	42	X	P409.7	657 958	41	X	273.1	380 887
3219187121	Oak parquetry	8	X	Q22.3	31 384	11	X	27.6	42 373
3219187131	Other oak flooring	13	X	49.1	121 315	21	X	41.6	80 387
32191872	Hardwood flooring, except oak	N	X	X	213 870	N	X	X	N
3219187241	Maple flooring	18	X	P26.7	58 095	10	X	15.4	26 192
3219187251	Glued laminated hardwood truck trailer flooring and railroad car decking	8	X	48.6	129 968	7	X	45.4	80 807
3219187291	Other hardwood flooring	24	X	X	25 807	15	X	X	23 994
3219187Y	Hardwood flooring, nsk	N	X	X	229 248	N	X	X	N
3219187YWW	Hardwood flooring, nsk	N	X	X	229 248	N	X	X	24 728
321918W	Other millwork (including flooring), nsk, total	N	X	X	299 536	N	X	X	N
321918WY	Other millwork (including flooring), nsk, total	N	X	X	299 536	N	X	X	N
321918WYWW	Other millwork (including flooring), nsk, for nonadministrative-record establishments	N	X	X	121 985	N	X	X	N
321918WYWY	Other millwork (including flooring), nsk, for administrative-record establishments	N	X	X	177 551	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
3219181	WOOD MOLDINGS, EXCEPT PREFINISHED MOLDINGS MADE FROM PURCHASED MOLDINGS, INCLUDING MOLDINGS COVERED WITH METAL, PLASTICS, ETC.		
	United States	1 516 751	1 194 825
	Alabama	19 180	2 655
	Arizona	31 934	22 870
	California	360 874	366 720
	Colorado	10 238	7 009
	Florida	10 692	17 243
	Georgia	77 102	4 438
	Illinois	24 818	16 882
	Indiana	126 080	39 547
	Massachusetts	2 017	N
	Michigan	28 030	20 500
	Minnesota	17 130	13 403
	Mississippi	5 657	N
	Missouri	4 595	4 113
	Nebraska	3 857	2 259
	New Hampshire	4 478	N
	New Jersey	3 894	N
	New Mexico	47 945	47 338
	New York	13 382	6 081
	North Carolina	46 215	43 983
	Ohio	20 592	35 816
	Oklahoma	8 244	N
	Oregon	140 786	127 173
	Pennsylvania	34 841	17 412
	South Carolina	12 673	9 320
	Tennessee	3 149	8 930
	Texas	104 499	94 546
	Utah	4 915	2 356
	Washington	61 695	42 292
	West Virginia	17 862	7 077
	Wisconsin	66 571	49 165

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
3219183	PREFINISHED WOOD MOLDINGS MADE FROM PURCHASED MOLDINGS, INCLUDING MOLDINGS COVERED WITH METAL, PLASTICS, ETC.		
	United States	62 715	152 015
	Florida	2 232	6 094
	Indiana	9 871	N
	North Carolina	3 119	N
	Ohio	4 152	N
	Pennsylvania	6 273	N
3219185	OTHER WOOD MILLWORK PRODUCTS, INCLUDING STAIRWORK, EXTERIOR MILLWORK, AND SOFTWOOD FLOORING		
	United States	1 161 378	N
	Alabama	69 819	N
	Arizona	21 319	N
	Arkansas	16 933	N
	California	104 365	N
	Colorado	20 029	N
	Connecticut	18 888	N
	Florida	24 099	N
	Georgia	80 937	N
	Illinois	54 450	N
	Indiana	23 742	N
	Kentucky	26 470	N
	Maryland	34 315	N
	Massachusetts	6 276	N
	Michigan	11 022	N
	Minnesota	24 432	N
	Missouri	5 029	N
	Nevada	2 384	N
	New Hampshire	10 047	N
	New Jersey	22 100	N
	New Mexico	8 046	N
	New York	44 494	N
	North Carolina	65 037	N
	Ohio	88 662	N
	Oklahoma	7 930	N
	Oregon	56 368	N
	Pennsylvania	30 074	N
	South Carolina	11 394	N
	Tennessee	28 973	N
	Texas	61 158	N
	Utah	3 122	N
	Virginia	87 743	N
Washington	16 486	N	
Wisconsin	28 135	N	
3219187	HARDWOOD FLOORING		
	United States	1 253 775	659 368
	Arkansas	96 439	87 731
	California	3 985	N
	Georgia	29 458	N
	Kentucky	41 001	17 901
	Michigan	41 228	N
	Mississippi	36 750	N
	Missouri	151 804	91 967
	New York	2 283	N
	North Carolina	51 604	N
	Ohio	7 772	N
	Pennsylvania	34 242	25 553
	Tennessee	412 785	215 169
	Virginia	88 649	54 279
	Wisconsin	45 268	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)
321918	OTHER MILLWORK (INCLUDING FLOORING)				
11331015	Hardwood logs and bolts	X	79 851	X	N
32100023	Hardwood rough lumber	X	559 522	X	N
32100029	Softwood rough lumber	X	216 248	X	N
32100027	Hardwood dressed lumber	X	78 010	X	N
32100033	Softwood dressed lumber	X	434 560	X	N
32191201	Softwood cut stock	X	75 840	X	N
32552003	Glues and adhesives	X	14 787	X	N
00970099	All other materials and components, parts, containers, and supplies	X	282 849	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	718 130	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

321918 OTHER MILLWORK (INCLUDING FLOORING)

This U.S. industry comprises establishments primarily engaged in manufacturing millwork (except wood windows, wood doors, and cut stock).

The data published with NAICS code 321918 include the following SIC industries:

2421 Sawmills and planing mills, general (pt)

2426 Hardwood dimension and flooring mills (pt)

2431 Millwork (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
3211131	24211 pt	24211 pt	3212117	24353	24353	3212197	24936	24936
321113111	2421111	2421161 pt	3212117111	2435331	2435331	3212197111	2493612	2493612
3211131121	2421115	2421163 pt	3212117291	2435398	2435398	3212197121	2493616	2493616
3211131131	2421121	2421165 pt	3212117YVW pt	2435300 pt	2435300	3212197131	2493617	2493617
3211131141	2421125	2421177 pt	3212117YVW pt	2435300 pt	2435311	3212197YVW	2493600	2493600
3211131YVW	2421100 pt	2421100 pt						
3211133	24212 pt	24212 pt	321211W	24350	24350	3212198	24937	24937
3211133111	2421241	2421212 pt	321211WYVW	2435000	2435000	3212198111	2493721	2493721
3211133121	2421244	2421213 pt	321211WYVW	2435002	2435002	3212198121	2493731	2493731
3211133131	2421247	2421215 pt				3212198YVW	2493700	2493700
3211133241	2421251	2421233 pt	3212121	24364	24364	321219W	24930	24930
3211133351	2421254	2421235 pt	3212121100	2436400	2436400	321219WYVW	2493000	2493000
3211133461	2421257	2421237 pt				321219WYVW	2493002	2493002
3211133YVW	2421200 pt	2421200 pt	3212123	24365	24365			
			3212123111	2436501	2436501	3219111	24311	24311
3211135	24215	24215	3212123221	2436505	2436505	3219111111	2431131	2431131
3211135111	2421516	2421516	3212123331	2436511	2436511	3219111121	2431132	2431132
3211135121	2421522	2421522	3212123441	2436521	2436521	3219111231	2431135	2431135
3211135231	2421518	2421518	3212123451	2436523	2436523	3219111241	2431136	2431136
3211135241	2421524	2421524	3212123YVW	2436500	2436500	3219111351	2431142	2431141 pt
3211135YVW	2421500	2421500				3219111361	2431143	2431141 pt
			3212125	24366	24366	3219111391 pt	2431191 pt	2431134
3211137 pt	24218 pt	24218 pt	3212125111	2436607	2436607	3219111391 pt	2431191 pt	2431145
			3212125121	2436611	2436611	3219111YVW	2431100	2431100
3211137 pt	24219 pt	24219 pt	3212125131	2436613	2436613			
			3212125141	2436615	2436615	3219113	24312	24312
3211137 pt	24290 pt	24290 pt	3212125151	2436617	2436617	3219113111	2431209	2431209
3211137111	2421817	2421817	3212125YVW	2436600	2436600	3219113121	2431215	2431215
3211137121	2421813	2421813				3219113YVW	2431200	2431200
3211137131 pt	2429011 pt	2429004	3212127	24367	24367			
3211137131 pt	2429011 pt	2429007	3212127111	2436703	2436703	3219115	24313	24313
3211137131 pt	2429011 pt	2429009	3212127121	2436721	2436721	3219115111	2431313	2431313
3211137141	2421911	2421911	3212127191 pt	2436727 pt	2436723	3219115121	2431315	2431315
3211137YVW pt	2421800 pt	2421800 pt	3212127191 pt	2436727 pt	2436725	3219115YVW	2431300	2431300
3211137YVW pt	2421900 pt	2421900 pt	3212127YVW	2436700	2436700			
						3219117	24314	24314
321113W pt	24210 pt	24210 pt	3212129	24363	24363	3219117111	2431411	2431411
			3212129111	2436331	2436331	3219117115	2431413	2431413
321113W pt	24290 pt	24290 pt	3212129191	2436398	2436398	3219117121	2431419	2431419
			3212129YVW pt	2436300 pt	2436300	3219117131	2431431	2431431
321113W pt	24390 pt	24390 pt	3212129YVW pt	2436300 pt	2436311	3219117135	2431433	2431433
321113WYVW pt	2421000 pt	2421000 pt				3219117141	2431435	2431435
321113WYVW pt	2429000 pt	2429000 pt	321212W	24360	24360	3219117145	2431437	2431437
321113WYVW pt	2439000 pt	2439000 pt	321212WYVW	2436000	2436000	3219117151	2431441	2431441
321113WYVW pt	2439085	2439033 pt	321212WYVW	2436002	2436002	3219117155	2431445	2431445
321113WYVW pt	2421002 pt	2421002 pt				3219117161 pt	2431449 pt	2431446
321113WYVW pt	2429002 pt	2429002 pt	3212130	24390 pt	24390 pt	3219117161 pt	2431449 pt	2431448
321113WYVW pt	2439002 pt	2439002 pt	3212130111	2439011	2439098 pt	3219117171	2431461	2431400 pt
			3212130221	2439015	2439031	3219117YVW	2431400	2431400 pt
3211141	24912	24912	3212130231	2439021	2439098 pt			
3211141111	2491201	2491201	3212130241 pt	2439025 pt	2439035	3219119	24315	24315
3211141121	2491203	2491203	3212130241 pt	2439025 pt	2439098 pt	3219119111	2431561	2431561
3211141131 pt	2491208 pt	2491205	3212130YVW	2439000 pt	2439000 pt	3219119121	2431584	2431584
3211141131 pt	2491208 pt	2491207	3212130YVW	2439002 pt	2439002 pt	3219119131	2431585	2431585
3211141141	2491209	2491209				3219119141	2431587	2431587
3211141151	2491212	2491212	3212140	24390 pt	24390 pt	3219119151	2431588	2431597 pt
3211141161	2491214	2491214	3212140111 pt	2439061 pt	2439051 pt	3219119191 pt	2431591 pt	2431575
3211141171	2491216	2491216	3212140111 pt	2439061 pt	2439098 pt	3219119191 pt	2431591 pt	2431581
3211141YVW	2491200	2491200	3212140121	2439065	2439098 pt	3219119191 pt	2431591 pt	2431597 pt
			3212140131 pt	2439071 pt	2439051 pt	3219119YVW	2431500	2431500
3211145	24913	24913	3212140131 pt	2439071 pt	2439098 pt			
3211145111	2491302	2491302	3212140YVW	2439000 pt	2439000 pt	321911W	24310 pt	24310 pt
3211145121	2491305	2491305	3212140YVW	2439002 pt	2439002 pt	321911WYVW	2431000 pt	2431000 pt
3211145131	2491307	2491307				321911WYVW	2431002 pt	2431002 pt
3211145141	2491309	2491309	3212191	24931	24931			
3211145151	2491312	2491312	3212191111	2493111 pt	2493120	3219121	24211 pt	24211 pt
3211145161	2491314	2491314	3212191111 pt	2493111 pt	2493121 pt	321912111	2421135	2421161 pt
3211145171	2491317	2491317	3212191221 pt	2493115 pt	2493103	3219121121	2421141	2421163 pt
3211145191	2491321	2491321	3212191221 pt	2493115 pt	2493105	3219121131	2421145	2421165 pt
3211145YVW	2491300	2491300	3212191291	2493191	2493121 pt	3219121141	2421151	2421177 pt
			3212191YVW	2493100	2493100	3219121151 pt	2421155 pt	2421161 pt
3211149	24919	24919				3219121151 pt	2421155 pt	2421163 pt
3211149111	2491905	2491905	3212192	24932	24932	3219121151 pt	2421155 pt	2421165 pt
3211149121	2491907	2491907	3212192111	2493205	2493205	3219121151 pt	2421155 pt	2421175
3211149191	2491911	2491911	3212192121	2493207	2493207	3219121YVW	2421100 pt	2421100 pt
3211149YVW	2491900	2491900	3212192191 pt	2493291 pt	2493209			
			3212192191 pt	2493291 pt	2493221	3219123	24212 pt	24212 pt
321114W	24910	24910	3212192YVW	2493200	2493200	3219123111	2421264	2421212 pt
321114WYVW	2491000	2491000				3219123121	2421267	2421213 pt
321114WYVW	2491002	2491002	3212193	24933	24933	3219123131	2421271	2421215 pt
			3212193111 pt	2493311 pt	2493314 pt	3219123141	2421274	2421233 pt
3212111	24354	24354	3212193111 pt	2493311 pt	2493316 pt	3219123151	2421277	2421235 pt
3212111111	2435419	2435419	3212193191 pt	2493391 pt	2493314 pt	3219123161	2421281	2421237 pt
3212111221	2435415	2435415	3212193191 pt	2493391 pt	2493316 pt	3219123171 pt	2421284 pt	2421212 pt
3212111231	2435417	2435417	3212193YVW	2493300	2493300	3219123171 pt	2421284 pt	2421213 pt
3212111241	2435421	2435421				3219123171 pt	2421284 pt	2421215 pt
3212111251	2435427	2435427	3212194	24934	24934	3219123171 pt	2421284 pt	2421231
3212111261	2435431	2435431	3212194111	2493412	2493412	3219123YVW	2421200 pt	2421200 pt
3212111YVW	2435400	2435400	3212194121	2493414	2493414			
			3212194131	2493416	2493416	3219125	24262	24262
3212113	24351	24351	3212194141	2493417	2493417	3219125111	2426231	2426224 pt
3212113111	2435101	2435101	3212194151	2493418	2493418	3219125115	2426241	2426224 pt
3212113221	2435105	2435105	3212194161	2493419	2493419	3219125221	2426233	2426251 pt
3212113231	2435107	2435107	3212194YVW	2493400	2493400	3219125225	2426243	2426251 pt
3212113291	2435147	2435147				3219125331	2426235	2426281 pt
3212113YVW	2435100	2435100	3212195	24935	24935	3219125335	2426245	2426281 pt
			3212195100	2493500	2493500	3219125441	2426283	2426283
3212115	24352	24352						
3212115100	2435200	2435200						

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVV	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVV pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVV pt	2439081	2439033 pt	3219207YVV pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVV pt	2421002 pt	2421002 pt	3219207YVV pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVV pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVV pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVV pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVV pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVV pt	2441000	2441000	3219990144	2499451	2499451
3219181YVV	2431600	2431600	321920WYVV pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVV pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVV pt	2449000 pt	2449000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVV pt	2499000 pt	2499000 pt	3219990157	2499462	2499462
3219183YVV	2431700	2431700	321920WYVV pt	2429002 pt	2429002 pt	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVV pt	2441002	2441002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVV pt	2448002	2448002	3219990167	2499485	2499485
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3219185131	2431835	2431835	3219911	24511	24511	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911111	2451111	2451111	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451113	3219990191 pt	2429031	2429087 pt
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321918W pt	24210 pt	24210 pt	3219921111	2452173	2452173	3219990YVV pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921121	2452175	2452175	3219990YVV pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219921YVV	2452100	2452100	3219990YVV pt	3131000 pt	3131000 pt
321918WYVV pt	2421000 pt	2421000 pt	3219923	24522	24522	3219990YVV pt	3999000 pt	3999000 pt
321918WYVV pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVV pt	3999900 pt	3999900 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVV pt	2421002 pt	2421002 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVV pt	2429002 pt	2429002 pt
321918WYVV pt	2426002 pt	2426002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499002 pt	2499002 pt
						3219990YVV pt	3131002 pt	3131002 pt
						3219990YVV pt	3999002 pt	3999002 pt

Wood Container and Pallet Manufacturing

1997

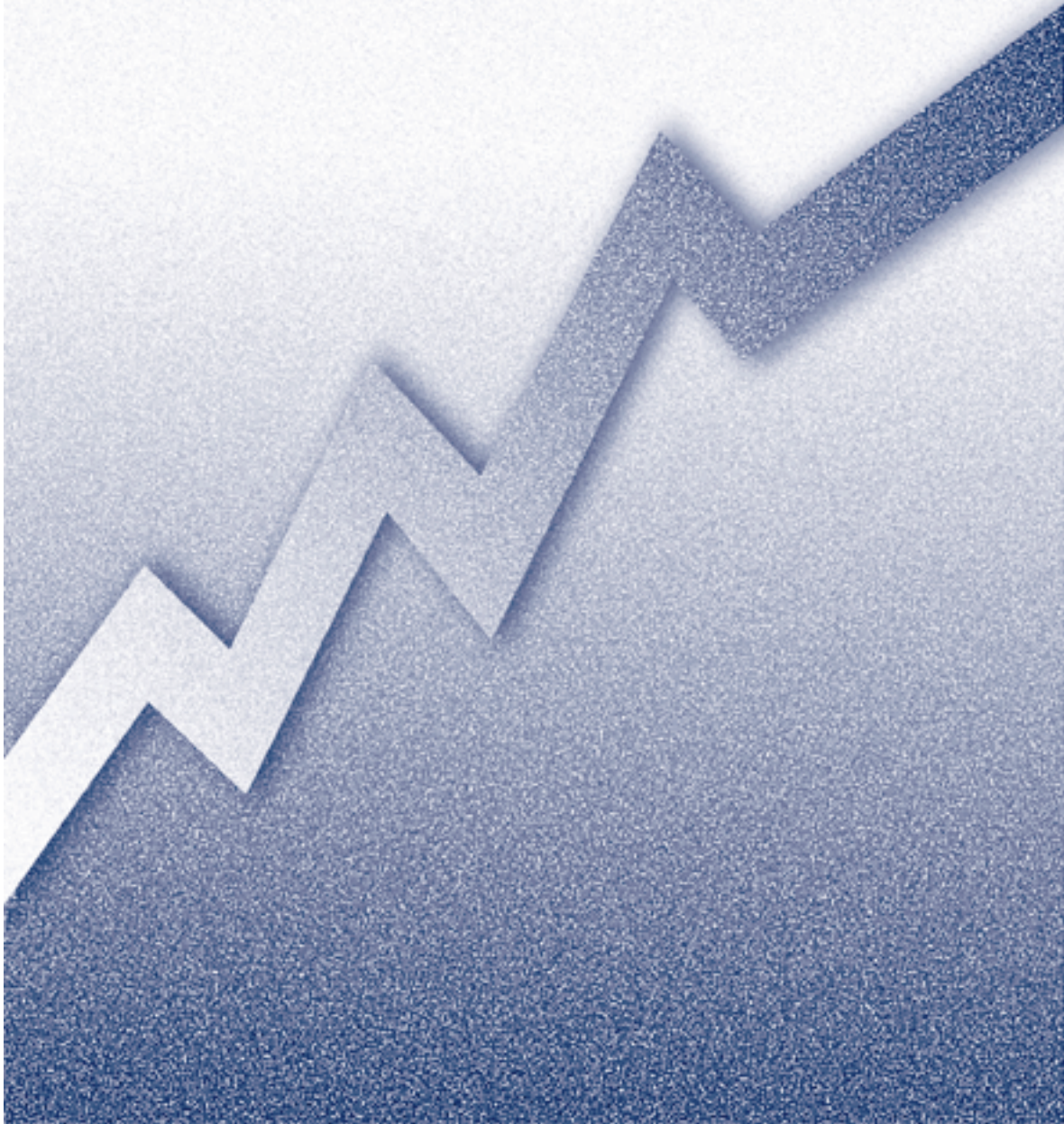
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1997 Economic Census

Manufacturing

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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	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)				
321920	Wood container & pallet mfg . . .	2 875	2 996	51 516	980 629	43 443	79 838	697 091	2 013 086	2 496 292	4 503 376	131 982
242920	Special product sawmills, n.e.c. (pt)	N	24	684	14 493	554	1 138	10 587	28 397	40 036	68 695	1 106
244100	Nailed wood boxes & shooks	N	318	4 885	108 629	3 879	7 368	68 532	194 705	212 151	405 966	7 379
244800	Wood pallets & skids	N	2 349	39 378	728 567	33 649	61 248	530 713	1 544 458	1 948 484	3 487 165	111 066
244900	Wood containers, n.e.c.	N	255	5 679	109 928	4 676	8 854	75 036	211 386	264 296	475 438	10 931
249920	Wood products, n.e.c. (pt)	N	50	890	19 012	685	1 230	12 223	34 140	31 325	66 112	1 500

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)
321920, WOOD CONTAINER & PALLET MFG												
United States	2	2 996	801	51 516	980 629	43 443	79 838	697 091	2 013 086	2 496 292	4 503 376	131 982
Alabama	3	64	19	1 216	20 208	1 046	1 761	14 845	42 005	52 083	94 142	3 030
Arizona	2	25	9	508	9 666	394	785	5 921	16 882	23 116	39 393	800
Arkansas	1	58	19	1 150	20 771	1 003	1 806	15 846	40 768	46 803	87 142	2 584
California	2	261	87	5 305	101 463	4 478	8 295	69 577	244 023	307 024	549 784	11 403
Colorado	2	25	5	376	7 685	330	668	6 048	15 434	16 039	31 585	1 082
Connecticut	4	24	5	284	7 495	244	521	5 274	14 805	16 130	30 771	1 049
Florida	1	61	16	1 302	26 728	1 115	2 267	19 992	56 893	59 294	115 695	2 877
Georgia	2	107	23	2 322	44 202	2 049	4 143	33 072	91 441	99 441	190 454	9 294
Idaho	7	11	2	128	1 942	109	218	1 450	3 951	5 398	9 336	294
Illinois	2	115	34	1 776	34 759	1 489	2 704	24 336	73 617	96 357	169 619	5 829
Indiana	3	136	31	1 968	35 034	1 587	2 897	25 736	76 309	86 220	162 054	5 087
Iowa	1	43	11	848	16 525	745	1 374	12 550	27 147	50 930	80 089	2 655
Kansas	1	25	7	446	9 234	378	684	6 342	20 917	23 448	44 226	895
Kentucky	1	93	25	1 872	35 960	1 621	2 857	26 586	72 518	108 607	181 662	4 603
Louisiana	2	31	7	351	6 993	300	588	5 214	16 676	19 143	35 785	971
Maine	1	18	6	304	5 657	244	417	3 364	11 283	13 777	24 805	1 378
Maryland	1	22	5	318	7 006	266	505	4 915	12 876	23 983	36 745	690
Massachusetts	3	51	7	608	15 635	478	948	10 696	35 096	33 294	68 358	1 734
Michigan	2	144	33	2 069	41 452	1 709	3 170	28 660	82 761	99 052	182 183	6 819
Minnesota	3	70	21	1 173	16 807	892	1 365	11 941	36 520	47 166	83 614	2 682
Mississippi	1	57	14	985	16 162	863	1 526	11 566	43 155	35 875	79 042	1 558
Missouri	1	110	31	2 096	39 456	1 693	2 955	25 629	77 821	105 928	183 342	3 660
Nebraska	1	25	4	303	5 766	253	442	3 791	10 643	14 355	24 972	924
Nevada	6	8	2	154	2 887	116	213	1 897	5 682	8 051	13 719	342
New Hampshire	5	21	5	250	4 238	209	340	2 965	10 553	11 264	21 853	484
New Jersey	3	45	9	559	11 794	453	803	7 563	26 631	29 817	56 698	1 354
New York	2	104	28	1 729	32 727	1 456	2 570	23 640	66 692	74 169	140 353	3 708
North Carolina	1	104	43	2 502	50 933	2 096	4 049	34 106	89 419	95 635	184 027	7 299
Ohio	2	218	52	3 206	62 465	2 688	4 871	44 509	125 046	145 756	271 046	9 171
Oklahoma	1	23	6	274	5 366	233	448	3 885	11 410	12 635	24 233	257
Oregon	1	47	10	539	11 118	453	838	7 809	24 170	37 796	61 650	1 544
Pennsylvania	2	182	41	2 633	50 068	2 256	4 172	37 182	108 311	136 655	244 062	6 740
Rhode Island	-	8	3	150	3 833	132	260	3 134	6 366	5 000	11 404	534
South Carolina	2	51	14	763	12 658	636	1 132	9 750	23 435	27 455	50 662	1 236
Tennessee	3	128	22	1 525	25 376	1 294	2 229	17 864	52 453	66 740	118 972	3 798
Texas	2	141	49	3 250	63 027	2 859	5 597	47 110	113 041	168 765	283 020	7 072
Utah	1	14	5	208	3 418	161	262	2 244	7 178	11 830	18 999	1 024
Virginia	2	60	22	1 491	26 794	1 273	2 215	19 332	52 812	69 446	121 404	4 346
Washington	-	48	15	934	18 407	769	1 319	12 151	32 533	51 220	82 799	1 574
West Virginia	-	19	7	640	10 245	547	991	7 080	22 465	24 941	47 171	1 291
Wisconsin	2	160	45	2 746	53 947	2 309	4 242	37 938	101 839	123 113	224 757	7 366

* 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
321920, WOOD CONTAINER & PALLET MFG		321920, WOOD CONTAINER & PALLET MFG—Con.	
Companies ¹ number..	2 875	Value added \$1,000..	2 013 086
All establishments number..	2 996	Total inventories, beginning of year \$1,000..	335 260
Establishments with 1 to 19 employees number..	2 195	Finished goods inventories, beginning of year \$1,000..	89 111
Establishments with 20 to 99 employees number..	750	Work-in-process inventories, beginning of year \$1,000..	57 477
Establishments with 100 employees or more number..	51	Materials and supplies inventories, beginning of year \$1,000..	188 672
All employees number..	51 516	Total inventories, end of year \$1,000..	358 650
Total compensation ² \$1,000..	1 157 826	Finished goods inventories, end of year \$1,000..	93 022
Annual payroll \$1,000..	980 629	Work-in-process inventories, end of year \$1,000..	59 568
Total fringe benefits \$1,000..	177 197	Materials and supplies inventories, end of year \$1,000..	206 060
Production workers, average for year number..	43 443	Gross book value of total assets at beginning of year \$1,000..	1 235 797
Production workers on March 12 number..	42 846	Total capital expenditures (new and used) \$1,000..	131 982
Production workers on May 12 number..	43 245	Capital expenditures for buildings and other structures (new and used) \$1,000..	24 597
Production workers on August 12 number..	43 817	Capital expenditures for machinery and equipment (new and used) \$1,000..	107 385
Production workers on November 12 number..	43 864	Total retirements ² \$1,000..	32 257
Production-worker hours 1,000..	79 838	Gross book value of total assets at end of year \$1,000..	1 335 522
Production-worker wages \$1,000..	697 091	Total depreciation during year ² \$1,000..	109 669
Total cost of materials \$1,000..	2 496 292	Total rental payments ² \$1,000..	67 736
Cost of materials, parts, containers, etc., consumed \$1,000..	2 250 060	Buildings and other structures rental payments ² \$1,000..	32 853
Cost of resales \$1,000..	156 711	Machinery and equipment rental payments ² \$1,000..	34 883
Cost of fuels \$1,000..	19 144	Cost of purchased services for the repair of buildings and other structures ³ \$1,000..	6 179
Cost of purchased electricity \$1,000..	48 152	Response coverage ratio ⁴ percent..	60
Cost of contract work \$1,000..	22 225	Cost of purchased services for the repair of machinery and equipment ³ \$1,000..	43 833
Quantity of electricity purchased for heat and power 1,000 kWh..	785 330	Response coverage ratio ⁴ percent..	60
Quantity of electricity generated less sold for heat and power 1,000 kWh..	S	Cost of purchased communications services ³ \$1,000..	7 063
Total value of shipments \$1,000..	4 503 376	Response coverage ratio ⁴ percent..	60
Primary products value of shipments \$1,000..	4 084 459	Cost of purchased legal services ³ \$1,000..	3 321
Secondary products value of shipments \$1,000..	165 182	Response coverage ratio ⁴ percent..	60
Total miscellaneous receipts \$1,000..	253 735	Cost of purchased accounting and bookkeeping services ³ \$1,000..	6 074
Value of resales \$1,000..	203 926	Response coverage ratio ⁴ percent..	60
Contract receipts \$1,000..	22 698	Cost of purchased advertising services ³ \$1,000..	3 377
Other miscellaneous receipts \$1,000..	27 111	Response coverage ratio ⁴ percent..	60
Primary products specialization ratio percent..	96	Cost of purchased software and other data processing services ³ \$1,000..	1 115
Value of primary products shipments made in all industries \$1,000..	4 313 574	Response coverage ratio ⁴ percent..	60
Value of primary products shipments made in this industry \$1,000..	4 084 459	Cost of purchased refuse removal (including hazardous waste) services ³ \$1,000..	5 334
Value of primary products shipments made in other industries \$1,000..	229 115	Response coverage ratio ⁴ percent..	60
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)				
321920, WOOD CONTAINER & PALLET MFG												
All establishments	2	2 996	801	51 516	980 629	43 443	79 838	697 091	2 013 086	2 496 292	4 503 376	131 982
Establishments with 1 to 4 employees	7	952	—	2 047	33 293	1 837	2 782	25 911	77 534	86 910	164 552	4 926
Establishments with 5 to 9 employees	4	588	—	4 004	68 992	3 290	5 429	50 554	151 208	176 166	327 050	9 301
Establishments with 10 to 19 employees	2	655	—	9 070	165 455	7 509	12 886	118 753	369 793	425 168	793 862	23 506
Establishments with 20 to 49 employees	1	584	584	17 233	340 496	14 477	27 012	237 942	704 483	910 231	1 612 243	47 135
Establishments with 50 to 99 employees	2	166	166	11 135	213 530	9 493	18 547	151 184	419 560	531 241	950 541	26 305
Establishments with 100 to 249 employees	1	47	47	6 656	132 291	5 695	10 772	97 854	261 616	317 216	574 787	15 927
Establishments with 250 to 499 employees	—	4	4	1 371	26 572	1 142	2 410	14 893	28 892	49 360	80 341	4 882
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	1 057	—	4 198	58 717	3 578	5 121	42 562	131 883	141 244	272 634	9 223

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)				
321920	Wood container & pallet mfg	2 996	51 516	980 629	43 443	79 838	697 091	2 013 086	2 496 292	4 503 376	131 982
3219201	Nailed and lock-corner wood boxes ..	116	2 279	53 556	1 832	3 510	33 857	92 103	86 424	178 228	2 439
3219203	Wood box and crate shoo	77	1 540	35 483	1 247	2 392	22 587	65 646	92 631	157 578	3 703
3219205	Wood and metal combination and wood pallets and pallet containers ..	1 515	35 912	680 700	30 608	56 942	495 187	1 437 784	1 838 137	3 270 525	102 755
3219207	Wood container parts and wood containers, nec.....	179	6 666	134 267	5 486	10 533	91 674	253 129	311 876	565 752	12 593

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)
321920	Wood containers and pallets	N	X	X	4 313 574	N	X	X	N
3219201	Nailed and lock-corner wood boxes	N	X	X	195 950	N	X	X	136 754
32192011	Nailed and lock-corner wood boxes	N	X	X	162 475	N	X	X	N
3219201111	Nailed and lock-corner wood boxes made from lumber	110	X	X	102 551	72	X	X	65 762
3219201121	Nailed and lock-corner wood boxes made from veneer, plywood, and wood and fiber combination, including wood and part wood cigar boxes	62	X	X	59 924	55	X	X	55 909
3219201Y	Nailed and lock-corner wood boxes, nsk	N	X	X	33 475	N	X	X	N
3219201YVV	Nailed and lock-corner wood boxes, nsk	N	X	X	33 475	N	X	X	15 083
3219203	Wood box and crate shook	N	X	X	173 632	N	X	X	230 722
32192031	Wood box and crate shook	N	X	X	156 442	N	X	X	N
3219203111	Wood box and crate shook made from lumber, for fruits and vegetables	29	X	X	41 652	35	X	X	60 876
3219203121	Wood box and crate shook made from lumber, not for fruits and vegetables	89	X	X	72 132	132	X	X	114 068
3219203131	Wood box and crate shook made from veneer and plywood	51	X	X	42 658	26	X	X	40 696
3219203Y	Wood box and crate shook, nsk	N	X	X	17 190	N	X	X	N
3219203YVV	Wood box and crate shook, nsk	N	X	X	17 190	N	X	X	15 082
3219205	Wood and metal combination and wood pallets and pallet containers	N	X	X	3 089 440	N	X	X	N
32192051	Wood pallets, except skids	N	X	X	2 287 696	N	X	X	N
3219205111	Wood pallets, except skids	1 092	X	X	2 287 696	1 027	X	X	1 449 144
32192052	Wood skids, wood and metal combination pallets, and wood and metal combination and wood pallet containers	N	X	X	216 133	N	X	X	N
3219205221	Wood skids	201	X	X	144 955	167	X	X	105 938
3219205231	Wood and metal combination pallets	14	X	X	10 978	67	X	X	92 601
3219205241	Wood and metal combination and wood pallet containers	37	X	X	60 200	64	X	X	73 491
3219205Y	Wood and metal combination and wood pallets and pallet containers, nsk	N	X	X	585 611	N	X	X	N
3219205YVV	Wood and metal combination and wood pallets and pallet containers, nsk	N	X	X	585 611	N	X	X	N
3219207	Wood container parts and wood containers, nec	N	X	X	545 838	N	X	X	N
32192071	Wood container parts and wood containers, nec	N	X	X	434 822	N	X	X	N
3219207111	Wirebound wood boxes made from lumber	13	X	X	27 847	12	X	X	25 363
3219207121	Wirebound wood boxes made from veneer and plywood, for fruits and vegetables	9	X	X	70 418	14	X	X	78 039
3219207131	Wirebound wood boxes made from veneer and plywood, not for fruits and vegetables	4	X	X	18 663	14	X	X	21 162
3219207141	Wood slack and tight cooperage (hogsheads, barrels, kegs, tubs, etc.), new and re-coopered used	32	X	X	171 314	19	X	X	98 070
3219207151	Wood jewelry boxes, silverware chests, instrument cases, cigar and cigarette boxes, microscope cases, tool or utility cases, and similar boxes, cases, and chests	54	X	X	66 920	44	X	X	42 927
3219207191	Other wood container parts and wood containers, nec	31	X	X	79 660	N	X	X	N
3219207Y	Wood container parts and wood containers, nec, nsk	N	X	X	111 016	N	X	X	N
3219207YVV	Wood container parts and wood containers, nec, nsk	N	X	X	111 016	N	X	X	N
321920W	Wood containers and pallets, nsk, total	N	X	X	308 714	N	X	X	N
321920WY	Wood containers and pallets, nsk, total	N	X	X	308 714	N	X	X	N
321920WYVV	Wood containers and pallets, nsk, for nonadministrative-record establishments	N	X	X	49 797	N	X	X	N
321920WYVY	Wood containers and pallets, nsk, for administrative-record establishments	N	X	X	258 917	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	
3219201	NAILED AND LOCK-CORNER WOOD BOXES			
	United States	195 950	136 754	
	Alabama	2 331	2 669	
	Arizona	2 191	N	
	Arkansas	3 945	N	
	California	61 348	50 214	
	Connecticut	3 463	N	
	Florida	2 244	N	
	Georgia	3 256	N	
	Massachusetts	6 374	6 136	
	Michigan	15 766	8 473	
	New Jersey	4 172	2 055	
	New York	9 033	5 400	
	North Carolina	7 764	N	
	Ohio	9 731	5 995	
	Pennsylvania	7 577	2 591	
	Tennessee	5 906	6 995	
	Texas	7 814	4 703	
	Washington	8 680	N	
	Wisconsin	10 508	N	
	3219203	WOOD BOX AND CRATE SHOOK		
United States		173 632	230 722	
Arkansas		2 225	N	
California		46 132	83 188	
Florida		7 667	N	
Illinois		7 041	6 395	
Kansas		3 793	N	
Massachusetts		4 624	2 046	
Michigan		7 362	10 335	
North Carolina		14 425	9 112	
Ohio		9 024	6 611	
Oklahoma		2 098	5 568	
Oregon		6 381	8 648	
Pennsylvania		9 892	14 216	
Texas		5 494	9 187	
Washington		14 026	15 413	
Wisconsin		8 026	7 921	
3219205		WOOD AND METAL COMBINATION AND WOOD PALLETS AND PALLET CONTAINERS		
		United States	3 089 440	N
		Alabama	81 262	N
		Arizona	27 397	N
	Arkansas	67 356	N	
	California	304 388	N	
	Colorado	18 277	N	
	Connecticut	18 174	N	
	Florida	64 669	N	
	Georgia	107 249	N	
	Idaho	6 659	N	
	Illinois	122 909	N	
	Indiana	133 098	N	
	Iowa	65 924	N	
	Kansas	21 567	N	
	Kentucky	90 907	N	
	Louisiana	28 724	N	
	Maine	15 695	N	
	Maryland	25 246	N	
	Massachusetts	43 320	N	
	Michigan	147 027	N	
	Minnesota	46 812	N	
	Mississippi	58 699	N	
	Missouri	91 811	N	
	Montana	2 981	N	
	Nebraska	19 974	N	
	Nevada	5 185	N	
	New Hampshire	12 467	N	
	New Jersey	41 920	N	
	New York	98 240	N	
	North Carolina	133 935	N	
	Ohio	202 454	N	
	Oklahoma	12 094	N	
	Oregon	36 898	N	
	Pennsylvania	201 642	N	
	Rhode Island	11 501	N	
	South Carolina	34 211	N	
	Tennessee	73 047	N	
	Texas	224 006	N	
	Utah	17 071	N	
	Vermont	4 829	N	
Virginia	122 495	N		
Washington	45 794	N		
West Virginia	39 538	N		
Wisconsin	154 721	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
3219207	WOOD CONTAINER PARTS AND WOOD CONTAINERS, NEC		
	United States	545 838	N
	Arkansas	8 856	N
	California	58 390	N
	Florida	23 756	N
	Georgia	37 537	N
	Illinois	9 371	N
	Indiana	4 601	N
	Kentucky	81 264	N
	Maine	6 042	N
	Massachusetts	19 379	N
	Michigan	4 091	N
	Minnesota	22 146	N
	Missouri	68 826	N
	New York	14 422	N
	North Carolina	21 158	N
	Ohio	27 285	N
	Oregon	3 094	N
	Pennsylvania	6 249	N
	South Carolina	3 738	N
	Tennessee	19 272	N
	Texas	15 049	N
	Virginia	6 665	N
	Washington	2 398	N
	Wisconsin	23 929	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)
321920	WOOD CONTAINER & PALLET MFG				
11331019	Logs and bolts mil bd ft Intl 1/4 in. scale	S	132 017	N	N
32100023	Hardwood rough lumber	X	406 058	X	N
32100029	Softwood rough lumber mil bd ft	S	133 540	N	N
32100027	Hardwood dressed lumber mil bd ft	^P 329.4	103 140	N	N
32100033	Softwood dressed lumber mil bd ft	^Q 593.0	153 237	N	N
00970099	All other materials and components, parts, containers, and supplies	X	S	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	S	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

321920 WOOD CONTAINER AND PALLET MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing wood pallets, wood box shoo, wood boxes, other wood containers, and wood parts for pallets and containers.

The data published with NAICS code 321920 include the following SIC industries:

- 2429 Special product sawmills, n.e.c. (pt)
- 2441 Nailed wood boxes & shoo
- 2448 Wood pallets and skids
- 2449 Wood containers, n.e.c.
- 2499 Wood products, n.e.c. (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 321920 include establishments primarily engaged in the manufacture of cooperage headings and staves made of purchased lumber. 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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
3211131121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
3211131131.....	2421121.....	2421165 pt.....	3212117YWW pt.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
3211131141.....	2421125.....	2421177 pt.....	3212117YWW pt.....	2435300 pt.....	2435311.....	3212197YWW.....	2493600.....	2493600.....
3211131YVV.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
3211133111.....	2421241.....	2421212 pt.....	321211WYWW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
3211133121.....	2421244.....	2421213 pt.....	321211WYWW.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
3211133131.....	2421247.....	2421215 pt.....				3212198YWW.....	2493700.....	2493700.....
3211133241.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....	321219W.....	24930.....	24930.....
3211133351.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219WYWW.....	2493000.....	2493000.....
3211133461.....	2421257.....	2421237 pt.....				321219WYWW.....	2493002.....	2493002.....
3211133YVV.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....			
			3212123111.....	2436501.....	2436501.....	3219111.....	24311.....	24311.....
3211135.....	24215.....	24215.....	3212123221.....	2436505.....	2436505.....	3219111111.....	2431131.....	2431131.....
3211135111.....	2421516.....	2421516.....	3212123331.....	2436511.....	2436511.....	3219111121.....	2431132.....	2431132.....
3211135121.....	2421522.....	2421522.....	3212123441.....	2436521.....	2436521.....	3219111231.....	2431135.....	2431135.....
3211135231.....	2421518.....	2421518.....	3212123451.....	2436523.....	2436523.....	3219111241.....	2431136.....	2431136.....
3211135241.....	2421524.....	2421524.....	3212123YVV.....	2436500.....	2436500.....	3219111351.....	2431142.....	2431141 pt.....
3211135YVV.....	2421500.....	2421500.....				3219111361.....	2431143.....	2431141 pt.....
			3212125.....	24366.....	24366.....	3219111391 pt.....	2431191 pt.....	2431134.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111391 pt.....	2431191 pt.....	2431145.....
			3212125121.....	2436611.....	2436611.....	3219111YVV.....	2431100.....	2431100.....
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....			
			3212125141.....	2436615.....	2436615.....	3219113.....	24312.....	24312.....
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	3219113111.....	2431209.....	2431209.....
3211137111.....	2421817.....	2421817.....	3212125YVV.....	2436600.....	2436600.....	3219113121.....	2431215.....	2431215.....
3211137121.....	2421813.....	2421813.....				3219113YVV.....	2431200.....	2431200.....
3211137131 pt.....	2429011 pt.....	2429004.....	3212127.....	24367.....	24367.....			
3211137131 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....	3219115.....	24313.....	24313.....
3211137131 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	321911511.....	2431313.....	2431313.....
3211137141.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVV pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVV.....	2431300.....	2431300.....
3211137YVV pt.....	2421900 pt.....	2421900 pt.....	3212127YVV.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			3212129111.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVV pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVV pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYWW pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYWW pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYWW pt.....	2439000 pt.....	2439000 pt.....	321212WYWW.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYWW pt.....	2439085.....	2439033 pt.....	321212WYWW.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYWW pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYWW pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYWW pt.....	2439002 pt.....	2439002 pt.....	3212130111.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			3212130221.....	2439015.....	2439031.....	3219117YVV.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
3211141111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
3211141121.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	3219119111.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVV.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
3211141131 pt.....	2491208 pt.....	2491207.....	3212130YVV.....	2439002 pt.....	2439002 pt.....	3219119131.....	2431585.....	2431585.....
3211141141.....	2491209.....	2491209.....				3219119141.....	2431587.....	2431587.....
3211141151.....	2491212.....	2491212.....	3212140.....	24390 pt.....	24390 pt.....	3219119151.....	2431588.....	2431597 pt.....
3211141161.....	2491214.....	2491214.....	3212140111 pt.....	2439061 pt.....	2439051 pt.....	3219119191 pt.....	2431591 pt.....	2431575.....
3211141171.....	2491216.....	2491216.....	3212140111 pt.....	2439061 pt.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431581.....
3211141YVV.....	2491200.....	2491200.....	3212140121.....	2439065.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431597 pt.....
			3212140131 pt.....	2439071 pt.....	2439051 pt.....	3219119YVV.....	2431500.....	2431500.....
3211145.....	24913.....	24913.....	3212140131 pt.....	2439071 pt.....	2439098 pt.....			
3211145111.....	2491302.....	2491302.....	3212140YVV.....	2439000 pt.....	2439000 pt.....	321911W.....	24310 pt.....	24310 pt.....
3211145121.....	2491305.....	2491305.....	3212140YVV.....	2439002 pt.....	2439002 pt.....	321911WYWW.....	2431000 pt.....	2431000 pt.....
3211145131.....	2491307.....	2491307.....				321911WYWW.....	2431002 pt.....	2431002 pt.....
3211145141.....	2491309.....	2491309.....	3212191.....	24931.....	24931.....			
3211145151.....	2491312.....	2491312.....	3212191111.....	2493111 pt.....	2493120.....	3219121.....	24211 pt.....	24211 pt.....
3211145161.....	2491314.....	2491314.....	3212191111 pt.....	2493111 pt.....	2493121 pt.....	321912111.....	2421135.....	2421161 pt.....
3211145171.....	2491317.....	2491317.....	3212191221 pt.....	2493115 pt.....	2493103.....	3219121121.....	2421141.....	2421163 pt.....
3211145191.....	2491321.....	2491321.....	3212191221 pt.....	2493115 pt.....	2493105.....	3219121131.....	2421145.....	2421165 pt.....
3211145YVV.....	2491300.....	2491300.....	3212191291.....	2493191.....	2493121 pt.....	3219121141.....	2421151.....	2421177 pt.....
			3212191YVV.....	2493100.....	2493100.....	3219121151 pt.....	2421155 pt.....	2421161 pt.....
3211149.....	24919.....	24919.....				3219121151 pt.....	2421155 pt.....	2421163 pt.....
3211149111.....	2491905.....	2491905.....	3212192.....	24932.....	24932.....	3219121151 pt.....	2421155 pt.....	2421165 pt.....
3211149121.....	2491907.....	2491907.....	3212192111.....	2493205.....	2493205.....	3219121151 pt.....	2421155 pt.....	2421175.....
3211149191.....	2491911.....	2491911.....	3212192121.....	2493207.....	2493207.....	3219121YVV.....	2421100 pt.....	2421100 pt.....
3211149YVV.....	2491900.....	2491900.....	3212192191 pt.....	2493291 pt.....	2493209.....			
			3212192191 pt.....	2493291 pt.....	2493221.....	3219123.....	24212 pt.....	24212 pt.....
321114W.....	24910.....	24910.....	3212192YVV.....	2493200.....	2493200.....	3219123111.....	2421264.....	2421212 pt.....
321114WYWW.....	2491000.....	2491000.....				3219123121.....	2421267.....	2421213 pt.....
321114WYWW.....	2491002.....	2491002.....	3212193.....	24933.....	24933.....	3219123131.....	2421271.....	2421215 pt.....
			3212193111 pt.....	2493311 pt.....	2493314 pt.....	3219123141.....	2421274.....	2421233 pt.....
3212111.....	24354.....	24354.....	3212193111 pt.....	2493311 pt.....	2493316 pt.....	3219123151.....	2421277.....	2421235 pt.....
3212111111.....	2435419.....	2435419.....	3212193191 pt.....	2493391 pt.....	2493314 pt.....	3219123161.....	2421281.....	2421237 pt.....
3212111221.....	2435415.....	2435415.....	3212193191 pt.....	2493391 pt.....	2493316 pt.....	3219123171 pt.....	2421284 pt.....	2421212 pt.....
3212111231.....	2435417.....	2435417.....	3212193YVV.....	2493300.....	2493300.....	3219123171 pt.....	2421284 pt.....	2421213 pt.....
3212111241.....	2435421.....	2435421.....				3219123171 pt.....	2421284 pt.....	2421215 pt.....
3212111251.....	2435427.....	2435427.....	3212194.....	24934.....	24934.....	3219123171 pt.....	2421284 pt.....	2421231.....
3212111261.....	2435431.....	2435431.....	3212194111.....	2493412.....	2493412.....	3219123YVV.....	2421200 pt.....	2421200 pt.....
3212111YVV.....	2435400.....	2435400.....	3212194121.....	2493414.....	2493414.....			
			3212194131.....	2493416.....	2493416.....	3219125.....	24262.....	24262.....
3212113.....	24351.....	24351.....	3212194141.....	2493417.....	2493417.....	3219125111.....	2426231.....	2426224 pt.....
3212113111.....	2435101.....	2435101.....	3212194151.....	2493418.....	2493418.....	3219125115.....	2426241.....	2426224 pt.....
3212113221.....	2435105.....	2435105.....	3212194161.....	2493419.....	2493419.....	3219125221.....	2426233.....	2426251 pt.....
3212113231.....	2435107.....	2435107.....	3212194YVV.....	2493400.....	2493400.....	3219125225.....	2426243.....	2426251 pt.....
3212113291.....	24351							

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVV	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
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321918WYVV pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVV pt	3999900 pt	3999900 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVV pt	2421002 pt	2421002 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVV pt	2429002 pt	2429002 pt
321918WYVV pt	2426002 pt	2426002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499002 pt	2499002 pt
						3219990YVV pt	3131002 pt	3131002 pt
						3219990YVV pt	3999002 pt	3999002 pt

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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.

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)				
321991	Manufactured home (mobile home) mfg	146	319	68 269	1 788 646	57 260	108 506	1 275 792	4 068 528	6 105 063	10 167 746	137 052
245100	Mobile homes	N	319	68 269	1 788 646	57 260	108 506	1 275 792	4 068 528	6 105 063	10 167 746	137 052

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)				
321991, MANUFACTURED HOME (MOBILE HOME) MFG												
United States	-	319	286	68 269	1 788 646	57 260	108 506	1 275 792	4 068 528	6 105 063	10 167 746	137 052
Alabama	1	28	25	8 166	193 283	6 859	12 827	132 331	381 163	624 843	1 008 310	13 537
Arizona	-	11	9	2 099	51 049	1 853	3 795	41 484	138 086	166 274	304 139	2 868
California	-	16	15	2 779	78 178	2 434	4 737	54 488	175 649	226 616	403 145	2 471
Colorado	-	3	3	484	10 477	442	901	7 916	23 528	37 094	60 281	323
Florida	-	20	16	3 218	80 553	2 682	5 374	55 907	188 641	263 124	451 592	2 448
Georgia	-	26	24	8 170	202 985	6 942	12 833	145 318	477 381	786 372	1 261 760	21 456
Idaho	2	6	5	1 267	30 875	1 086	1 920	21 328	72 509	107 201	179 273	1 521
Indiana	1	38	33	6 679	214 198	5 522	11 064	162 059	483 384	770 132	1 254 600	16 931
Kansas	-	4	4	628	17 208	516	853	12 675	44 828	64 447	109 268	636
Minnesota	-	4	4	708	17 750	609	1 130	14 289	55 156	59 314	114 743	1 972
Nebraska	4	5	4	1 076	28 209	873	1 771	19 840	54 762	106 719	161 251	3 268
North Carolina	-	27	27	6 440	175 471	5 400	10 268	125 080	402 842	583 820	984 513	10 664
Ohio	-	5	4	727	16 587	617	1 052	12 170	42 768	65 623	108 461	598
Oklahoma	-	3	3	508	9 179	454	914	7 410	22 797	25 153	47 155	317
Oregon	-	12	12	3 190	86 838	2 711	5 111	63 139	202 081	255 998	458 995	3 342
Pennsylvania	1	19	18	3 031	80 012	2 438	4 397	54 245	188 158	262 262	450 964	5 813
Tennessee	-	16	16	3 547	99 478	3 049	6 005	72 488	249 352	413 878	659 361	9 696
Texas	-	27	27	7 267	186 090	6 224	11 738	132 306	455 839	654 461	1 106 183	28 323
Washington	-	6	4	889	23 283	718	1 202	13 679	45 448	62 697	108 781	550
Wisconsin	-	5	4	858	22 559	705	1 182	16 672	53 889	68 042	122 152	370

* 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
321991, MANUFACTURED HOME (MOBILE HOME) MFG		321991, MANUFACTURED HOME (MOBILE HOME) MFG—Con.	
Companies ¹	number.. 146	Value added	\$1,000.. 4 068 528
All establishments	number.. 319	Total inventories, beginning of year	\$1,000.. 353 789
Establishments with 1 to 19 employees	number.. 33	Finished goods inventories, beginning of year	\$1,000.. 61 269
Establishments with 20 to 99 employees	number.. 43	Work-in-process inventories, beginning of year	\$1,000.. 53 324
Establishments with 100 employees or more	number.. 243	Materials and supplies inventories, beginning of year	\$1,000.. 239 196
All employees	number.. 68 269	Total inventories, end of year	\$1,000.. 370 372
Total compensation ²	\$1,000.. 2 150 590	Finished goods inventories, end of year	\$1,000.. 61 572
Annual payroll	\$1,000.. 1 788 646	Work-in-process inventories, end of year	\$1,000.. 58 866
Total fringe benefits	\$1,000.. 361 944	Materials and supplies inventories, end of year	\$1,000.. 249 934
Production workers, average for year	number.. 57 260	Gross book value of total assets at beginning of year	\$1,000.. 940 261
Production workers on March 15	number.. 56 078	Total capital expenditures (new and used)	\$1,000.. 137 052
Production workers on May 15	number.. 57 196	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 78 382
Production workers on August 15	number.. 57 659	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 58 670
Production workers on November 15	number.. 58 107	Total retirements ²	\$1,000.. 25 783
Production-worker hours	1,000.. 108 506	Gross book value of total assets at end of year	\$1,000.. 1 051 530
Production-worker wages	\$1,000.. 1 275 792	Total depreciation during year ²	\$1,000.. 67 715
Total cost of materials	\$1,000.. 6 105 063	Total rental payments ²	\$1,000.. 23 617
Cost of materials, parts, containers, etc., consumed	\$1,000.. 6 020 534	Buildings and other structures rental payments ²	\$1,000.. 11 801
Cost of resales	\$1,000.. 13 768	Machinery and equipment rental payments ²	\$1,000.. 11 816
Cost of fuels	\$1,000.. 7 353	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 7 678
Cost of purchased electricity	\$1,000.. 23 248	Response coverage ratio ⁴	percent.. 88
Cost of contract work	\$1,000.. 40 160	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 16 495
Quantity of electricity purchased for heat and power	1,000 kWh.. 355 909	Response coverage ratio ⁴	percent.. 88
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 12 058
Total value of shipments	\$1,000.. 10 167 746	Response coverage ratio ⁴	percent.. 88
Primary products value of shipments	\$1,000.. 10 120 659	Cost of purchased legal services ³	\$1,000.. 9 644
Secondary products value of shipments	\$1,000.. 10 827	Response coverage ratio ⁴	percent.. 88
Total miscellaneous receipts	\$1,000.. 36 260	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 249
Value of resales	\$1,000.. 15 960	Response coverage ratio ⁴	percent.. 88
Contract receipts	\$1,000.. D	Cost of purchased advertising services ³	\$1,000.. 7 618
Other miscellaneous receipts	\$1,000.. D	Response coverage ratio ⁴	percent.. 88
Primary products specialization ratio	percent.. 99	Cost of purchased software and other data processing services ³	\$1,000.. 1 362
Value of primary products shipments made in all industries	\$1,000.. 10 145 000	Response coverage ratio ⁴	percent.. 88
Value of primary products shipments made in this industry	\$1,000.. 10 120 659	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 21 568
Value of primary products shipments made in other industries	\$1,000.. 24 341	Response coverage ratio ⁴	percent.. 88
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)				
321991, MANUFACTURED HOME (MOBILE HOME) MFG												
All establishments	-	319	286	68 269	1 788 646	57 260	108 506	1 275 792	4 068 528	6 105 063	10 167 746	137 052
Establishments with 1 to 4 employees	-	19	-	31	720	26	47	630	17 905	25 100	42 967	173
Establishments with 5 to 9 employees	2	4	-	33	1 022	25	49	643	2 905	6 366	9 238	248
Establishments with 10 to 19 employees	5	10	-	131	4 183	102	223	2 702	9 444	17 969	27 445	430
Establishments with 20 to 49 employees	5	20	20	702	18 570	560	1 215	12 499	38 868	61 951	100 818	1 669
Establishments with 50 to 99 employees	-	23	23	1 793	45 033	1 442	2 791	29 217	89 677	133 380	221 723	3 244
Establishments with 100 to 249 employees	-	148	148	26 149	683 820	21 895	42 336	482 435	1 593 937	2 433 287	4 022 688	47 333
Establishments with 250 to 499 employees	1	76	76	26 175	675 655	22 117	41 242	488 751	1 589 366	2 227 080	3 817 722	54 967
Establishments with 500 to 999 employees	-	16	16	9 693	254 881	8 397	15 440	182 618	530 974	854 391	1 383 805	24 374
Establishments with 1,000 to 2,499 employees	-	3	3	3 562	104 762	2 696	5 163	76 297	195 452	345 539	541 340	4 614
Establishments with 2,500 employees or more	-	-	-	-	-	-	-	-	-	-	-	-
Administrative records ²	9	27	-	199	5 262	171	331	3 951	12 249	20 589	32 890	569

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)				
321991	Manufactured home (mobile home) mfg	319	68 269	1 788 646	57 260	108 506	1 275 792	4 068 528	6 105 063	10 167 746	137 052
3219911	Manufactured homes (mobile homes)	257	65 184	1 708 864	54 804	103 417	1 220 920	3 913 189	5 836 330	9 744 666	131 347
3219915	Nonresidential mobile buildings	32	2 708	69 672	2 136	4 388	47 585	133 340	231 481	363 749	4 612

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)
321991	Manufactured homes (mobile homes)	N	X	X	10 145 000	N	X	X	4 446 189
3219911	Manufactured homes (mobile homes)	N	X	X	9 714 646	N	X	X	3 920 654
32199111	Manufactured homes (mobile homes), 13 feet 11 inches or less in width	N	X	X	815 707	N	X	X	N
3219911111	Manufactured homes (mobile homes), 11 feet 11 inches or less in width	6	X	¶4.8	87 186	7	X	1.9	26 309
3219911121	Manufactured homes (mobile homes), 12 feet to 13 feet 11 inches in width	15	X	29.9	728 521	N	X	N	N
32199112	Manufactured homes (mobile homes), 14 feet or more in width	N	X	X	2 811 087	N	X	X	N
3219911231	Manufactured homes (mobile homes), 14 feet to 15 feet 11 inches in width	36	X	67.6	1 269 302	N	X	N	N
3219911241	Manufactured homes (mobile homes), 16 feet or more in width	34	X	67.9	1 541 785	N	X	N	N
32199113	Manufactured homes (mobile homes), multisection	N	X	X	5 156 277	N	X	X	N
3219911351	Manufactured homes (mobile homes), multisection	48	X	160.4	5 156 277	58	X	90.8	2 224 143
3219911Y	Manufactured homes (mobile homes), nsk	N	X	X	931 575	N	X	X	N
3219911YWV	Manufactured homes (mobile homes), nsk	N	X	X	931 575	N	X	X	197 746
3219915	Nonresidential mobile buildings	N	X	X	367 186	N	X	X	162 541
32199151	Nonresidential mobile buildings	N	X	X	311 172	N	X	X	N
3219915111	Nonresidential mobile buildings, office and other commercial	26	X	¶11.1	156 269	23	X	¶5.1	64 404
3219915121	Other nonresidential mobile buildings, including classroom and industrial	22	X	S	154 903	18	X	¶4.1	62 253
3219915Y	Nonresidential mobile buildings, nsk	N	X	X	56 014	N	X	X	N
3219915YWV	Nonresidential mobile buildings, nsk	N	X	X	56 014	N	X	X	35 884
321991W	Manufactured homes (mobile homes), nsk, total	N	X	X	63 168	N	X	X	362 994
321991WY	Manufactured home (mobile home) manufacturing, nsk, total	N	X	X	63 168	N	X	X	N
321991WYWW	Manufactured home (mobile home) manufacturing, nsk, for nonadministrative-record establishments	N	X	X	30 364	N	X	X	357 669
321991WYWY	Manufactured home (mobile home) manufacturing, nsk, for administrative-record establishments	N	X	X	32 804	N	X	X	5 325

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: ¶ 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
3219911	MANUFACTURED HOMES (MOBILE HOMES)		
	United States	9 714 646	3 920 654
	Alabama	985 636	337 181
	Arizona	293 858	102 206
	California	312 114	191 440
	Florida	417 179	N
	Georgia	1 217 298	397 945
	Idaho	178 846	N
	Indiana	1 135 298	448 106
	Kansas	108 949	44 100
	Minnesota	114 169	N
	Mississippi	318 124	N
	Nebraska	159 194	67 242
	North Carolina	986 614	377 032
	Ohio	105 602	N
	Oregon	439 661	N
	Pennsylvania	446 264	253 861

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
3219911	MANUFACTURED HOMES (MOBILE HOMES)—Con.		
	Tennessee.....	649 537	N
	Texas.....	1 068 964	N
	Virginia.....	104 636	N
	Washington.....	89 822	66 742
	Wisconsin.....	118 140	N
3219915	NONRESIDENTIAL MOBILE BUILDINGS		
	United States.....	367 186	162 541
	California.....	86 758	N
	Florida.....	28 941	12 918
	Georgia.....	43 288	21 171
	Indiana.....	74 655	41 691
	Texas.....	35 918	N

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

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)
321991	MANUFACTURED HOME (MOBILE HOME) MFG				
33100001	Metal mill shapes and forms, including castings (steel, aluminum, etc.).....	X	59 373	X	40 879
33232203	Steel siding.....	X	51 962	X	N
33232205	Aluminum siding.....	X	28 096	X	N
32619903	Vinyl siding.....	X	139 996	X	N
33291300	Metal plumbing fixtures, fittings, and trim (including enameled) (except forgings).....	X	97 339	X	40 095
33232101	Metal doors and door units, windows and window units.....	X	247 026	X	112 290
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products.....	X	87 779	X	42 383
32612200	Plastics fabricated pipe and pipe fittings.....	X	121 013	X	50 103
32121003	Plywood.....	X	79 078	X	50 350
32121903	Particleboard (wood).....	X	153 135	X	68 915
32121905	Oriented strand board (OSB) and waferboard.....	X	152 431	X	64 255
32742001	Gypsum building board: 5/16 inch thick.....	X	234 253	X	N
32742003	Gypsum building board: greater than 5/16 inch thick.....	X	85 598	X	N
32100021	Dressed lumber.....	X	681 978	X	273 147
32191003	Wood millwork, including molding, doors, and windows.....	X	153 702	X	67 522
33711000	Kitchen cabinets, wood.....	X	133 473	X	50 443
31411001	Floor coverings, textile.....	X	189 691	X	83 307
32619200	Linoleum and other hard-surfaced floor covering.....	X	70 529	X	29 272
00190000	Heating equipment and air conditioners, including heat pumps.....	X	111 867	X	58 393
001900B3	Current-carrying wiring devices, including switches, connectors, lampholders, etc.....	X	143 996	X	74 063
32799303	Mineral fiber blankets, batts, and boards.....	X	109 463	X	64 778
00190046	Loose fill insulating materials (mineral fiber, cellulose fiber, and other).....	X	47 272	X	28 551
33251009	Builders' hardware (including door locks, locksets, lock trim, screen hardware, etc.).....	X	72 173	X	30 286
33710003	Household-type furniture, including tables, sofas, beds, mattresses, etc.....	X	47 429	X	32 953
001900B2	Household appliances, including refrigerators, cooking equipment, and other household appliances, exc. air conditioners.....	X	307 029	X	132 740
32621003	Pneumatic tires and inner tubes.....	X	81 633	X	42 627
33600003	Trailer axles, wheels, brakes, undercarriages, and other metal vehicular parts.....	X	325 879	X	157 187
00970099	All other materials and components, parts, containers, and supplies.....	X	457 579	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.....	X	1 549 762	X	564 596

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

321991 MANUFACTURED HOME (MOBILE HOME) MANUFACTURING

This U.S. industry comprises establishments primarily engaged in making manufactured homes (i.e., mobile homes) and nonresidential mobile buildings. Manufactured homes are designed to accept permanent water, sewer,

and utility connections and although equipped with wheels, they are not intended for regular highway movement.

The data published with NAICS code 321991 include the following SIC industry:

2451 Mobile homes

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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
3211131121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
3211131131.....	2421121.....	2421165 pt.....	3212117YVW pt.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
3211131141.....	2421125.....	2421177 pt.....	3212117YVW pt.....	2435300 pt.....	2435311.....	3212197YVW.....	2493600.....	2493600.....
3211131YVW.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
3211133111.....	2421241.....	2421212 pt.....	321211WYVW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
3211133121.....	2421244.....	2421213 pt.....	321211WYVY.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
3211133131.....	2421247.....	2421215 pt.....				3212198YVW.....	2493700.....	2493700.....
3211133241.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....			
3211133351.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219W.....	24930.....	24930.....
3211133461.....	2421257.....	2421237 pt.....				321219WYVW.....	2493000.....	2493000.....
3211133YVW.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....	321219WYVY.....	2493002.....	2493002.....
			3212123111.....	2436501.....	2436501.....			
3211135.....	24215.....	24215.....	3212123221.....	2436505.....	2436505.....	3219111.....	24311.....	24311.....
3211135111.....	2421516.....	2421516.....	3212123331.....	2436511.....	2436511.....	3219111111.....	2431131.....	2431131.....
3211135121.....	2421522.....	2421522.....	3212123441.....	2436521.....	2436521.....	3219111121.....	2431132.....	2431132.....
3211135231.....	2421518.....	2421518.....	3212123451.....	2436523.....	2436523.....	3219111231.....	2431135.....	2431135.....
3211135241.....	2421524.....	2421524.....	3212123YVW.....	2436500.....	2436500.....	3219111241.....	2431136.....	2431136.....
3211135YVW.....	2421500.....	2421500.....				3219111351.....	2431142.....	2431141 pt.....
			3212125.....	24366.....	24366.....	3219111361.....	2431143.....	2431141 pt.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111391 pt.....	2431191 pt.....	2431134.....
			3212125121.....	2436611.....	2436611.....	3219111391 pt.....	2431191 pt.....	2431145.....
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....	3219111YVW.....	2431100.....	2431100.....
			3212125141.....	2436615.....	2436615.....			
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	3219113.....	24312.....	24312.....
3211137111.....	2421817.....	2421817.....	3212125YVW.....	2436600.....	2436600.....	3219113111.....	2431209.....	2431209.....
3211137121.....	2421813.....	2421813.....				3219113121.....	2431215.....	2431215.....
3211137131 pt.....	2429011 pt.....	2429004.....	3212127.....	24367.....	24367.....	3219113YVW.....	2431200.....	2431200.....
3211137131 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....			
3211137131 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	3219115.....	24313.....	24313.....
3211137141.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVW pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVW.....	2431300.....	2431300.....
3211137YVW pt.....	2421900 pt.....	2421900 pt.....	3212127YVW.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			3212129111.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVW pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVW pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYVW pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYVW pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYVW pt.....	2439000 pt.....	2439000 pt.....	321212WYVW.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYVW pt.....	2439085.....	2439033 pt.....	321212WYVW.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYVW pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYVW pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYVW pt.....	2439002 pt.....	2439002 pt.....	3212130111.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			3212130221.....	2439015.....	2439031.....	3219117YVW.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
3211141111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
3211141121.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	3219119111.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVW.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
3211141131 pt.....	2491208 pt.....	2491207.....	3212130YVY.....	2439002 pt.....	2439002 pt.....	3219119131.....	2431585.....	2431585.....
3211141141.....	2491209.....	2491209.....				3219119141.....	2431587.....	2431587.....
3211141151.....	2491212.....	2491212.....	3212140.....	24390 pt.....	24390 pt.....	3219119151.....	2431588.....	2431597 pt.....
3211141161.....	2491214.....	2491214.....	3212140111 pt.....	2439061 pt.....	2439051 pt.....	3219119191 pt.....	2431591 pt.....	2431575.....
3211141171.....	2491216.....	2491216.....	3212140111 pt.....	2439061 pt.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431581.....
3211141YVW.....	2491200.....	2491200.....	3212140121.....	2439065.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431597 pt.....
			3212140131 pt.....	2439071 pt.....	2439051 pt.....	3219119YVW.....	2431500.....	2431500.....
3211145.....	24913.....	24913.....	3212140131 pt.....	2439071 pt.....	2439098 pt.....			
3211145111.....	2491302.....	2491302.....	3212140YVW.....	2439000.....	2439000 pt.....	321911W.....	24310 pt.....	24310 pt.....
3211145121.....	2491305.....	2491305.....	3212140YVY.....	2439002 pt.....	2439002 pt.....	321911WYVW.....	2431000 pt.....	2431000 pt.....
3211145131.....	2491307.....	2491307.....				321911WYVY.....	2431002 pt.....	2431002 pt.....
3211145141.....	2491309.....	2491309.....	3212191.....	24931.....	24931.....			
3211145151.....	2491312.....	2491312.....	3212191111.....	2493111 pt.....	2493120.....	3219121.....	24211 pt.....	24211 pt.....
3211145161.....	2491314.....	2491314.....	3212191111 pt.....	2493111 pt.....	2493121 pt.....	321912111.....	2421135.....	2421161 pt.....
3211145171.....	2491317.....	2491317.....	3212191221 pt.....	2493115 pt.....	2493103.....	3219121121.....	2421141.....	2421163 pt.....
3211145191.....	2491321.....	2491321.....	3212191221 pt.....	2493115 pt.....	2493105.....	3219121131.....	2421145.....	2421165 pt.....
3211145YVW.....	2491300.....	2491300.....	3212191291.....	2493191.....	2493121 pt.....	3219121141.....	2421151.....	2421177 pt.....
			3212191YVW.....	2493100.....	2493100.....	3219121151 pt.....	2421155 pt.....	2421161 pt.....
3211149.....	24919.....	24919.....				3219121151 pt.....	2421155 pt.....	2421163 pt.....
3211149111.....	2491905.....	2491905.....	3212192.....	24932.....	24932.....	3219121151 pt.....	2421155 pt.....	2421165 pt.....
3211149121.....	2491907.....	2491907.....	3212192111.....	2493205.....	2493205.....	3219121151 pt.....	2421155 pt.....	2421175.....
3211149191.....	2491911.....	2491911.....	3212192121.....	2493207.....	2493207.....	3219121YVW.....	2421100 pt.....	2421100 pt.....
3211149YVW.....	2491900.....	2491900.....	3212192191 pt.....	2493291 pt.....	2493209.....			
			3212192191 pt.....	2493291 pt.....	2493221.....	3219123.....	24212 pt.....	24212 pt.....
321114W.....	24910.....	24910.....	3212192YVW.....	2493200.....	2493200.....	3219123111.....	2421264.....	2421212 pt.....
321114WYVW.....	2491000.....	2491000.....				3219123121.....	2421267.....	2421213 pt.....
321114WYVY.....	2491002.....	2491002.....	3212193.....	24933.....	24933.....	3219123131.....	2421271.....	2421215 pt.....
			3212193111.....	2493311 pt.....	2493314 pt.....	3219123141.....	2421274.....	2421233 pt.....
3212111.....	24354.....	24354.....	3212193111 pt.....	2493311 pt.....	2493316 pt.....	3219123151.....	2421277.....	2421235 pt.....
3212111111.....	2435419.....	2435419.....	3212193191 pt.....	2493391 pt.....	2493314 pt.....	3219123161.....	2421281.....	2421237 pt.....
3212111221.....	2435415.....	2435415.....	3212193191 pt.....	2493391 pt.....	2493316 pt.....	3219123171 pt.....	2421284 pt.....	2421212 pt.....
3212111231.....	2435417.....	2435417.....	3212193YVW.....	2493300.....	2493300.....	3219123171 pt.....	2421284 pt.....	2421213 pt.....
3212111241.....	2435421.....	2435421.....				3219123171 pt.....	2421284 pt.....	2421215 pt.....
3212111251.....	2435427.....	2435427.....	3212194.....	24934.....	24934.....	3219123171 pt.....	2421284 pt.....	2421231.....
3212111261.....	2435431.....	2435431.....	3212194111.....	2493412.....	2493412.....	3219123YVW.....	2421200 pt.....	2421200 pt.....
3212111YVW.....	2435400.....	2435400.....	3212194121.....	2493414.....	2493414.....			
			3212194131.....	2493416.....	2493416.....	3219125.....	24262.....	24262.....
3212113.....	24351.....	24351.....	3212194141.....	2493417.....	2493417.....	3219125111.....	2426231.....	2426224 pt.....
3212113111.....	2435101.....	2435101.....	3212194151.....	2493418.....	2493418.....	3219125115.....	2426241.....	2426224 pt.....
3212113221.....	2435105.....	2435105.....	3212194161.....	2493419.....	2493419.....	3219125221.....	2426233.....	2426251 pt.....
3212113231.....	2435107.....	2435107.....	3212194YVW.....	2493400.....	2493400.....	3219125225.....	2426243.....	2426251 pt.....
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1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201121	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVY	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVV pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVV pt	2439081	2439033 pt	3219207YVV pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVV pt	2421002 pt	2421002 pt	3219207YVV pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVV pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVV pt	2439002 pt	2439002 pt	321920W pt	24410	24410	3219990127	2499417	2499417
321912WYVV pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVV pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVV pt	2441000	2441000	3219990144	2499451	2499451
3219181YVV	2431600	2431600	321920WYVV pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVV pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVV pt	2499000 pt	2499000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVV pt	2499002 pt	2499002 pt	3219990157	2499462	2499462
3219183YVV	2431700	2431700	321920WYVV pt	2441002	2441002	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVV pt	2448002	2448002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVV pt	2449002	2449002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVV pt	2499002 pt	2499002 pt	3219990171	2499489	2499489
3219185121	2431825	2431825	3219911	24511	24511	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911111	2451111	2451111	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911121 pt	2451112 pt	2451113	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451115	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911351	2451118	2451118	3219990191 pt	2499498 pt	2499498 pt
3219185YVV pt	2421800 pt	2421800 pt	321991YVV	2451100	2451100	3219990191 pt	3131033	3131061 pt
3219185YVV pt	2431800	2431800	3219915	24512	24512	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915111	2451222	2451222	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915121	2451230	2451230	3219990191 pt	3999999 pt	3999999 pt
3219187121	2426121	2426121	3219915YVV	2451200	2451200	3219990YVV pt	2421000 pt	2421000 pt
3219187131	2426123	2426123	321991W	24510	24510	3219990YVV pt	2421800 pt	2421800 pt
3219187241	2426131	2426131	321991WYVV	2451000	2451000	3219990YVV pt	2421900 pt	2421900 pt
3219187251	2426141	2426141	321991WYVY	2451002	2451002	3219990YVV pt	2429000 pt	2429000 pt
3219187291	2426198	2426198	3219921	24521	24521	3219990YVV pt	2499000 pt	2499000 pt
3219187YVV	2426100	2426100	3219921111	2452173	2452173	3219990YVV pt	2499100 pt	2499100 pt
321918W pt	24210 pt	24210 pt	3219921121	2452175	2452175	3219990YVV pt	2499400 pt	2499400 pt
321918W pt	24260 pt	24260 pt	3219921YVV	2452100	2452100	3219990YVV pt	3131000 pt	3131000 pt
321918W pt	24310 pt	24310 pt	3219923	24522	24522	3219990YVV pt	3999000 pt	3999000 pt
321918WYVV pt	2421000 pt	2421000 pt	3219923111	2452217	2452217	3219990YVV pt	3999900 pt	3999900 pt
321918WYVV pt	2426000 pt	2426000 pt	3219923121	2452219	2452219	3219990YVV pt	2421002 pt	2421002 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923131	2452223	2452223	3219990YVV pt	2429002 pt	2429002 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499002 pt	2499002 pt
321918WYVV pt	2426002 pt	2426002 pt				3219990YVV pt	3131002 pt	3131002 pt
						3219990YVV pt	3999002 pt	3999002 pt

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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)				
321992	Prefabricated wood building mfg	656	709	23 335	583 559	17 145	33 446	351 893	1 264 828	1 787 142	3 053 596	56 831
245200	Prefabricated wood buildings ..	N	709	23 335	583 559	17 145	33 446	351 893	1 264 828	1 787 142	3 053 596	56 831

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)				
321992, PREFABRICATED WOOD BUILDING MFG												
United States	2	709	249	23 335	583 559	17 145	33 446	351 893	1 264 828	1 787 142	3 053 596	56 831
Alabama	1	16	5	330	6 906	232	472	4 131	13 906	21 073	35 059	348
Arizona	-	11	4	1 066	24 199	936	1 714	15 570	53 654	84 812	138 650	1 184
California	6	37	11	1 311	30 602	969	1 913	20 671	75 897	106 440	183 320	2 722
Colorado	-	10	2	112	2 239	61	122	1 524	5 689	7 620	13 303	502
Florida	1	12	3	122	2 898	80	166	1 882	7 423	7 970	15 433	122
Georgia	2	15	6	419	9 928	294	571	5 898	21 063	29 222	49 414	1 038
Idaho	1	15	3	262	5 976	194	374	3 463	9 198	15 704	24 838	239
Indiana	-	24	9	1 081	31 903	858	1 687	19 507	57 854	81 452	139 724	2 000
Iowa	-	7	3	283	7 839	230	480	5 439	22 354	41 583	64 196	528
Kansas	4	10	7	626	14 328	443	870	8 753	27 754	43 372	70 082	2 387
Louisiana	-	11	4	167	4 609	131	240	3 158	8 190	12 713	20 919	942
Maryland	-	10	5	608	15 678	492	929	10 973	37 512	105 530	143 191	1 177
Massachusetts	9	7	2	173	6 697	130	248	4 045	13 477	19 791	33 430	683
Michigan	2	25	13	858	24 498	593	1 204	13 070	64 856	66 417	131 728	1 992
Minnesota	-	18	7	539	15 797	339	643	6 958	26 733	57 715	84 799	2 702
Montana	3	24	6	421	10 337	336	596	6 795	19 606	24 008	44 152	1 179
Nebraska	-	4	1	158	3 688	112	223	2 215	6 471	3 610	10 066	145
New Hampshire	1	18	6	512	13 175	370	774	7 714	24 661	26 795	51 154	631
New Jersey	9	7	1	196	3 612	151	306	2 264	7 247	10 639	17 971	366
New Mexico	3	4	3	121	2 212	107	181	1 526	5 648	4 605	10 626	34
North Carolina	-	26	8	841	19 754	688	1 474	13 205	33 682	52 844	86 469	1 974
Ohio	-	15	7	510	15 959	351	815	9 334	36 156	54 250	91 104	2 055
Oregon	-	25	6	353	8 344	256	440	5 437	16 304	18 017	34 306	876
Pennsylvania	1	56	29	3 255	81 538	2 437	4 443	49 590	162 945	239 489	402 347	6 195
Tennessee	3	26	11	916	22 296	685	1 379	13 918	46 941	50 713	97 242	2 337
Texas	5	27	6	548	12 814	424	889	7 783	26 425	38 667	65 243	1 111
Virginia	1	25	12	1 420	30 005	979	1 721	17 742	59 699	73 041	133 188	3 010
Washington	5	35	4	485	10 634	325	546	5 559	22 589	26 584	49 211	1 254
West Virginia	3	7	5	228	5 083	191	387	3 591	10 878	13 393	24 424	378
Wisconsin	-	27	15	1 774	51 031	1 174	2 524	26 346	121 391	182 525	304 864	6 693

* 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
321992, PREFABRICATED WOOD BUILDING MFG		321992, PREFABRICATED WOOD BUILDING MFG	
— Con.		— Con.	
Companies ¹	number.. 656	Value added	\$1,000.. 1 264 828
All establishments	number.. 709	Total inventories, beginning of year	\$1,000.. 269 090
Establishments with 1 to 19 employees	number.. 460	Finished goods inventories, beginning of year	\$1,000.. 69 458
Establishments with 20 to 99 employees	number.. 187	Work-in-process inventories, beginning of year	\$1,000.. 37 268
Establishments with 100 employees or more	number.. 62	Materials and supplies inventories, beginning of year	\$1,000.. 162 364
All employees	number.. 23 335	Total inventories, end of year	\$1,000.. 268 055
Total compensation ²	\$1,000.. 705 298	Finished goods inventories, end of year	\$1,000.. 68 203
Annual payroll	\$1,000.. 583 559	Work-in-process inventories, end of year	\$1,000.. 36 897
Total fringe benefits	\$1,000.. 121 739	Materials and supplies inventories, end of year	\$1,000.. 162 955
Production workers, average for year	number.. 17 145	Gross book value of total assets at beginning of year	\$1,000.. 565 048
Production workers on March 15	number.. 15 968	Total capital expenditures (new and used)	\$1,000.. 56 831
Production workers on May 15	number.. 17 269	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 17 038
Production workers on August 15	number.. 18 156	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 39 793
Production workers on November 15	number.. 17 187	Total retirements ²	\$1,000.. 15 440
Production-worker hours	\$1,000.. 33 446	Gross book value of total assets at end of year	\$1,000.. 606 439
Production-worker wages	\$1,000.. 351 893	Total depreciation during year ²	\$1,000.. 42 390
Total cost of materials	\$1,000.. 1 787 142	Total rental payments ²	\$1,000.. 23 114
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 619 959	Buildings and other structures rental payments ²	\$1,000.. 11 407
Cost of resales	\$1,000.. 94 932	Machinery and equipment rental payments ²	\$1,000.. 11 707
Cost of fuels	\$1,000.. 5 091	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 3 269
Cost of purchased electricity	\$1,000.. 9 172	Response coverage ratio ⁴	percent.. 68
Cost of contract work	\$1,000.. 57 988	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 9 975
Quantity of electricity purchased for heat and power	1,000 kWh.. 149 641	Response coverage ratio ⁴	percent.. 68
Quantity of electricity generated less sold for heat and power	1,000 kWh.. —	Cost of purchased communications services ³	\$1,000.. 5 030
Total value of shipments	\$1,000.. 3 053 596	Response coverage ratio ⁴	percent.. 68
Primary products value of shipments	\$1,000.. 2 793 944	Cost of purchased legal services ³	\$1,000.. 4 884
Secondary products value of shipments	\$1,000.. 118 846	Response coverage ratio ⁴	percent.. 68
Total miscellaneous receipts	\$1,000.. 140 806	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 1 989
Value of resales	\$1,000.. 124 247	Response coverage ratio ⁴	percent.. 68
Contract receipts	\$1,000.. 6 053	Cost of purchased advertising services ³	\$1,000.. 12 529
Other miscellaneous receipts	\$1,000.. 10 506	Response coverage ratio ⁴	percent.. 68
Primary products specialization ratio	percent.. 95	Cost of purchased software and other data processing services ³	\$1,000.. 1 919
Value of primary products shipments made in all industries	\$1,000.. 2 887 798	Response coverage ratio ⁴	percent.. 68
Value of primary products shipments made in this industry	\$1,000.. 2 793 944	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 3 124
Value of primary products shipments made in other industries	\$1,000.. 93 854	Response coverage ratio ⁴	percent.. 68
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)				
321992, PREFABRICATED WOOD BUILDING MFG												
All establishments	2	709	249	23 335	583 559	17 145	33 446	351 893	1 264 828	1 787 142	3 053 596	56 831
Establishments with 1 to 4 employees	8	258	—	526	11 441	404	670	8 463	24 133	34 112	58 506	1 190
Establishments with 5 to 9 employees	3	88	—	586	13 282	413	702	8 354	35 254	40 897	76 313	1 750
Establishments with 10 to 19 employees	2	114	—	1 584	36 929	1 090	1 983	22 019	84 952	114 266	198 840	5 190
Establishments with 20 to 49 employees	2	119	119	3 804	95 204	2 636	5 178	57 490	211 697	257 283	470 967	10 496
Establishments with 50 to 99 employees	1	68	68	4 944	126 033	3 582	7 214	76 068	275 762	425 976	698 899	11 507
Establishments with 100 to 249 employees	2	48	48	6 955	178 104	5 093	10 051	100 790	371 699	470 699	843 934	15 539
Establishments with 250 to 499 employees	—	13	13	D	D	D	D	D	D	D	D	D
Establishments with 500 to 999 employees	9	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	250	—	738	15 078	558	879	10 554	30 288	44 713	75 328	1 690

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)				
321992	Prefabricated wood building mfg	709	23 335	583 559	17 145	33 446	351 893	1 264 828	1 787 142	3 053 596	56 831
3219921	Components for prefabricated stationary wood buildings (not sold as complete units)	53	1 995	47 397	1 449	2 834	25 728	97 961	134 000	232 465	5 253
3219923	Precut packages for prefabricated stationary wood buildings (complete units)	110	3 817	109 238	2 599	5 151	58 138	249 648	399 083	650 835	11 083
3219925	Prefabricated stationary wood buildings shipped in panel form (complete units)	56	2 546	69 534	1 736	3 543	39 309	192 619	322 221	515 784	9 553
3219927	Prefabricated stationary wood buildings shipped in three-dimensional assemblies	127	10 885	261 748	8 372	16 569	167 772	528 838	654 388	1 180 384	21 496

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)
321992	Prefabricated wood buildings	N	X	X	2 887 798	N	X	X	2 163 573
3219921	Components for prefabricated stationary wood buildings (not sold as complete units)	N	X	X	237 495	N	X	X	270 911
32199211	Components for prefabricated stationary wood buildings (not sold as complete units)	N	X	X	203 298	N	X	X	N
3219921111	Components for prefabricated stationary wood residential buildings, including homes, townhouses, and apartments (not sold as complete units)	82	X	X	182 582	76	X	X	167 537
3219921121	Components for prefabricated stationary wood nonresidential buildings, including motels and hotels (not sold as complete units)	22	X	X	20 716	29	X	X	35 808
3219921Y	Components for prefabricated stationary wood buildings (not sold as complete units), nsk	N	X	X	34 197	N	X	X	N
3219921YVV	Components for prefabricated stationary wood buildings (not sold as complete units), nsk	N	X	X	34 197	N	X	X	67 566
3219923	Precut packages for prefabricated stationary wood buildings (complete units)	N	X	X	594 828	N	X	X	406 096
32199231	Precut packages for prefabricated stationary wood buildings (complete units)	N	X	X	577 233	N	X	X	N
3219923111	Precut packages for prefabricated stationary residential log homes (complete units)	77	X	S	230 720	51	X	15.2	121 346
3219923121	Precut packages for other prefabricated stationary residential wood buildings, including homes, townhouses, and apartments (complete units)	16	X	S	135 157	24	X	5.7	86 704
3219923131	Precut packages for prefabricated stationary nonresidential wood buildings, including motels and hotels (complete units)	14	X	X	211 356	22	X	X	194 848
3219923Y	Precut packages for prefabricated stationary wood buildings (complete units), nsk	N	X	X	17 595	N	X	X	N
3219923YVV	Precut packages for prefabricated stationary wood buildings (complete units), nsk	N	X	X	17 595	N	X	X	3 198
3219925	Prefabricated stationary wood buildings shipped in panel form (complete units)	N	X	X	450 391	N	X	X	339 546
32199251	Prefabricated stationary wood buildings shipped in panel form (complete units)	N	X	X	419 840	N	X	X	N
3219925111	Prefabricated stationary residential single family wood buildings, including townhouses, shipped in panel form (complete units)	33	X	P10.0	324 932	31	X	P9.9	254 838
3219925121	Prefabricated stationary residential multifamily wood buildings shipped in panel form (complete units)	6	X	0.6	13 777	8	X	P0.6	5 778
3219925131	Prefabricated stationary nonresidential wood buildings, including motels and hotels, shipped in panel form (complete units)	13	X	S	81 131	13	X	S	39 269
3219925Y	Prefabricated stationary wood buildings shipped in panel form (complete units), nsk	N	X	X	30 551	N	X	X	N
3219925YVV	Prefabricated stationary wood buildings shipped in panel form (complete units), nsk	N	X	X	30 551	N	X	X	39 661
3219927	Prefabricated stationary wood buildings shipped in three-dimensional assemblies	N	X	X	1 159 163	N	X	X	821 976
32199271	Prefabricated stationary residential wood buildings, including homes, townhouses, and apartments, shipped in three-dimensional assemblies	N	X	X	795 481	N	X	X	N
3219927111	Prefabricated stationary residential wood buildings, including homes, townhouses, and apartments, shipped in three-dimensional assemblies	62	X	S	795 481	58	X	P17.2	588 331
32199272	Prefabricated stationary nonresidential wood buildings, including motels and hotels, shipped in three-dimensional assemblies	N	X	X	298 920	N	X	X	N
3219927221	Prefabricated stationary nonresidential wood buildings, including motels and hotels, shipped in three-dimensional assemblies	65	X	S	298 920	33	X	P13.3	132 257

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)
321992	Prefabricated wood buildings— Con.								
3219927	Prefabricated stationary wood buildings shipped in three-dimensional assemblies— Con.								
3219927Y	Prefabricated stationary wood buildings shipped in three-dimensional assemblies, nsk	N	X	X	64 762	N	X	X	N
3219927YV	Prefabricated stationary wood buildings shipped in three-dimensional assemblies, nsk	N	X	X	64 762	N	X	X	101 388
321992W	Prefabricated wood buildings, nsk, total	N	X	X	445 921	N	X	X	325 044
321992WY	Prefabricated wood buildings, nsk, total	N	X	X	445 921	N	X	X	N
321992WYV	Prefabricated wood buildings, nsk, for nonadministrative-record establishments	N	X	X	374 466	N	X	X	269 437
321992WYW	Prefabricated wood buildings, nsk, for administrative-record establishments	N	X	X	71 455	N	X	X	55 607

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
3219921	COMPONENTS FOR PREFABRICATED STATIONARY WOOD BUILDINGS (NOT SOLD AS COMPLETE UNITS)		
	United States	237 495	270 911
	Alabama	11 973	4 707
	Georgia	4 978	N
	Illinois	22 765	14 591
	Indiana	5 778	N
	Kentucky	8 346	5 759
	Michigan	13 565	5 102
	Minnesota	7 388	2 275
	Oregon	3 062	2 820
	Pennsylvania	3 588	6 936
	Tennessee	3 377	N
	Texas	9 773	5 153
	Virginia	26 444	5 380
	Washington	18 271	5 459
	Wisconsin	28 982	85 730
3219923	PRECUT PACKAGES FOR PREFABRICATED STATIONARY WOOD BUILDINGS (COMPLETE UNITS)		
	United States	594 828	406 096
	California	27 882	27 055
	Maine	11 964	13 260
	Michigan	61 049	20 700
	Missouri	5 650	9 993
	Montana	32 935	9 548
	New York	10 972	10 244
	North Carolina	6 136	3 462
	Oregon	8 290	N
	Pennsylvania	49 603	24 115
	Tennessee	53 358	32 581
	Virginia	8 647	N
	Washington	4 112	2 309
	Wisconsin	26 761	N
3219925	PREFABRICATED STATIONARY WOOD BUILDINGS SHIPPED IN PANEL FORM (COMPLETE UNITS)		
	United States	450 391	339 546
	Illinois	21 513	42 146
	Minnesota	7 971	N
	New York	31 968	18 775
	Ohio	20 180	5 428
	Texas	2 959	N
	Wisconsin	137 130	61 750

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
3219927	PREFABRICATED STATIONARY WOOD BUILDINGS SHIPPED IN THREE-DIMENSIONAL ASSEMBLIES		
	United States	1 159 163	821 976
	Alabama	15 540	N
	California	75 446	12 218
	Idaho	16 029	N
	Illinois	17 755	N
	Indiana	83 741	48 904
	Kansas	21 745	N
	Louisiana	6 329	N
	New Hampshire	36 784	19 296
	New York	46 120	30 259
	North Carolina	47 294	N
	Oregon	15 883	N
	Pennsylvania	254 134	257 678
	Texas	45 204	21 701
	Virginia	66 727	51 854
	Washington	4 131	5 459
	Wisconsin	89 070	80 983

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)
321992	PREFABRICATED WOOD BUILDING MFG				
32100023	Hardwood rough lumber	X	45 484	S	24 620
32100029	Softwood rough lumber	S	94 933	189.8	60 821
32100027	Hardwood dressed lumber	S	17 254	S	12 495
32100033	Softwood dressed lumber	[¶] 550.4	230 276	[¶] 325.0	127 951
32121201	Softwood plywood	S	48 064	[¶] 113.9	37 733
	basis)				
32742005	Gypsum building board	X	21 829	X	16 734
33251009	Builders' hardware (including door locks, locksets, lock trim, screen hardware, etc.)	X	23 941	X	15 525
32799301	Mineral wool insulation (fibrous glass, rock wool, etc.)	X	15 892	X	13 474
00190056	Windows and window units, including wood, metal, and vinyl	S	63 551	[¶] 405.8	54 921
32191100	Wood doors and door units	X	25 150	X	14 975
33232103	Metal doors and door units	[¶] 94.0	17 162	[¶] 83.2	13 688
33711000	Kitchen cabinets, wood	X	40 253	X	30 311
32121901	Reconstituted wood products, including particleboard, oriented strandboard, medium density fiberboard, and hardboard	X	46 535	X	22 366
33232207	Metal siding, including aluminum, steel	X	59 912	X	38 987
33231201	Fabricated structural iron, steel, and aluminum including truss plates	X	19 585	X	15 482
001900B3	Current-carrying wiring devices, including switches, connectors, lampholders, etc.	X	17 671	X	17 471
31411001	Floor coverings, textile	X	17 818	X	18 550
00970099	All other materials and components, parts, containers, and supplies	X	171 594	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.	X	643 055	X	448 394

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: [¶] 10 to 19 percent estimated; [¶] 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

321992 PREFABRICATED WOOD BUILDING MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing prefabricated wood buildings and wood sections and panels for prefabricated wood buildings.

The data published with NAICS code 321992 include the following SIC industry:

2452 Prefabricated wood buildings

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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
3211131121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
3211131131.....	2421121.....	2421165 pt.....	3212117YVV.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
3211131141.....	2421125.....	2421177 pt.....	3212117YVV.....	2435300 pt.....	2435311.....	3212197YVV.....	2493600.....	2493600.....
3211131YVV.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
3211133111.....	2421241.....	2421212 pt.....	321211WYWW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
3211133121.....	2421244.....	2421213 pt.....	321211WYVY.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
3211133131.....	2421247.....	2421215 pt.....				3212198YVV.....	2493700.....	2493700.....
3211133241.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....	321219W.....	24930.....	24930.....
3211133351.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219WYWW.....	2493000.....	2493000.....
3211133461.....	2421257.....	2421237 pt.....				321219WYVY.....	2493002.....	2493002.....
3211133YVV.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....	3219111.....	24311.....	24311.....
			3212123111.....	2436501.....	2436501.....	3219111111.....	2431131.....	2431131.....
3211135.....	24215.....	24215.....	3212123221.....	2436505.....	2436505.....	3219111121.....	2431132.....	2431132.....
3211135111.....	2421516.....	2421516.....	3212123331.....	2436511.....	2436511.....	3219111231.....	2431135.....	2431135.....
3211135121.....	2421522.....	2421522.....	3212123441.....	2436521.....	2436521.....	3219111241.....	2431136.....	2431136.....
3211135231.....	2421518.....	2421518.....	3212123451.....	2436523.....	2436523.....	3219111351.....	2431142.....	2431141 pt.....
3211135241.....	2421524.....	2421524.....	3212123YVV.....	2436500.....	2436500.....	3219111361.....	2431143.....	2431141 pt.....
3211135YVV.....	2421500.....	2421500.....				3219111391 pt.....	2431191 pt.....	2431134.....
			3212125.....	24366.....	24366.....	3219111391 pt.....	2431191 pt.....	2431145.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111YVV.....	2431100.....	2431100.....
			3212125121.....	2436611.....	2436611.....			
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....			
			3212125141.....	2436615.....	2436615.....			
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	3219113.....	24312.....	24312.....
3211137111.....	2421817.....	2421817.....	3212125YVV.....	2436600.....	2436600.....	3219113111.....	2431209.....	2431209.....
3211137121.....	2421813.....	2421813.....				3219113121.....	2431215.....	2431215.....
3211137131 pt.....	2429011 pt.....	2429004.....	3212127.....	24367.....	24367.....	3219113YVV.....	2431200.....	2431200.....
3211137131 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....			
3211137131 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	3219115.....	24313.....	24313.....
3211137141.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVV pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVV.....	2431300.....	2431300.....
3211137YVV pt.....	2421900 pt.....	2421900 pt.....	3212127YVV.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			3212129111.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVV pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVV pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYVV pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYVV pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYVV pt.....	2439000 pt.....	2439000 pt.....	321212WYVV.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYVV pt.....	2439085.....	2439033 pt.....	321212WYVY.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYVV pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYVV pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYVV pt.....	2439002 pt.....	2439002 pt.....	3212130111.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			3212130221.....	2439015.....	2439031.....	3219117YVV.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
3211141111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
3211141121.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	3219119111.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVV.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
3211141131 pt.....	2491208 pt.....	2491207.....	3212130YVY.....	2439002 pt.....	2439002 pt.....	3219119131.....	2431585.....	2431585.....
3211141141.....	2491209.....	2491209.....				3219119141.....	2431587.....	2431587.....
3211141151.....	2491212.....	2491212.....	3212140.....	24390 pt.....	24390 pt.....	3219119151.....	2431588.....	2431597 pt.....
3211141161.....	2491214.....	2491214.....	3212140111 pt.....	2439061 pt.....	2439051 pt.....	3219119191 pt.....	2431591 pt.....	2431575.....
3211141171.....	2491216.....	2491216.....	3212140111 pt.....	2439061 pt.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431581.....
3211141YVV.....	2491200.....	2491200.....	3212140121.....	2439065.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431597 pt.....
			3212140131 pt.....	2439071 pt.....	2439051 pt.....	3219119YVV.....	2431500.....	2431500.....
3211145.....	24913.....	24913.....	3212140131 pt.....	2439071 pt.....	2439098 pt.....			
3211145111.....	2491302.....	2491302.....	3212140YVV.....	2439000 pt.....	2439000 pt.....	321911W.....	24310 pt.....	24310 pt.....
3211145121.....	2491305.....	2491305.....	3212140YVY.....	2439002 pt.....	2439002 pt.....	321911WYVV.....	2431000 pt.....	2431000 pt.....
3211145131.....	2491307.....	2491307.....				321911WYVY.....	2431002 pt.....	2431002 pt.....
3211145141.....	2491309.....	2491309.....	3212191.....	24931.....	24931.....			
3211145151.....	2491312.....	2491312.....	3212191111.....	2493111 pt.....	2493120.....	3219121.....	24211 pt.....	24211 pt.....
3211145161.....	2491314.....	2491314.....	3212191111 pt.....	2493111 pt.....	2493121 pt.....	321912111.....	2421135.....	2421161 pt.....
3211145171.....	2491317.....	2491317.....	3212191221 pt.....	2493115 pt.....	2493103.....	3219121121.....	2421141.....	2421163 pt.....
3211145191.....	2491321.....	2491321.....	3212191221 pt.....	2493115 pt.....	2493105.....	3219121131.....	2421145.....	2421165 pt.....
3211145YVV.....	2491300.....	2491300.....	3212191291.....	2493191.....	2493121 pt.....	3219121141.....	2421151.....	2421177 pt.....
			3212191YVV.....	2493100.....	2493100.....	3219121151 pt.....	2421155 pt.....	2421161 pt.....
3211149.....	24919.....	24919.....				3219121151 pt.....	2421155 pt.....	2421163 pt.....
3211149111.....	2491905.....	2491905.....	3212192.....	24932.....	24932.....	3219121151 pt.....	2421155 pt.....	2421165 pt.....
3211149121.....	2491907.....	2491907.....	3212192111.....	2493205.....	2493205.....	3219121151 pt.....	2421155 pt.....	2421175.....
3211149191.....	2491911.....	2491911.....	3212192121.....	2493207.....	2493207.....	3219121YVV.....	2421100 pt.....	2421100 pt.....
3211149YVV.....	2491900.....	2491900.....	3212192191 pt.....	2493291 pt.....	2493209.....			
			3212192191 pt.....	2493291 pt.....	2493221.....			
321114W.....	24910.....	24910.....	3212192YVV.....	2493200.....	2493200.....	3219123.....	24212 pt.....	24212 pt.....
321114WYVV.....	2491000.....	2491000.....				3219123111.....	2421264.....	2421212 pt.....
321114WYVY.....	2491002.....	2491002.....				3219123121.....	2421267.....	2421213 pt.....
			3212193.....	24933.....	24933.....	3219123131.....	2421271.....	2421215 pt.....
3212111.....	24354.....	24354.....	3212193111.....	2493311 pt.....	2493314 pt.....	3219123141.....	2421274.....	2421233 pt.....
3212111111.....	2435419.....	2435419.....	3212193111 pt.....	2493311 pt.....	2493316 pt.....	3219123151.....	2421277.....	2421235 pt.....
3212111221.....	2435415.....	2435415.....	3212193191 pt.....	2493391 pt.....	2493314 pt.....	3219123161.....	2421281.....	2421237 pt.....
3212111231.....	2435417.....	2435417.....	3212193191 pt.....	2493391 pt.....	2493316 pt.....	3219123171 pt.....	2421284 pt.....	2421212 pt.....
3212111241.....	2435421.....	2435421.....	3212193YVV.....	2493300.....	2493300.....	3219123171 pt.....	2421284 pt.....	2421213 pt.....
3212111251.....	2435427.....	2435427.....				3219123171 pt.....	2421284 pt.....	2421215 pt.....
3212111261.....	2435431.....	2435431.....				3219123171 pt.....	2421284 pt.....	2421231.....
3212111YVV.....	2435400.....	2435400.....	3212194.....	24934.....	24934.....	3219123YVV.....	2421200 pt.....	2421200 pt.....
			3212194111.....	2493412.....	2493412.....			
3212113.....	24351.....	24351.....	3212194121.....	2493414.....	2493414.....			
3212113111.....	2435101.....	2435101.....	3212194131.....	2493416.....	2493416.....	3219125.....	24262.....	24262.....
3212113221.....	2435105.....	2435105.....	3212194141.....	2493417.....	2493417.....	3219125111.....	2426231.....	2426224 pt.....
3212113231.....	2435107.....	2435107.....	3212194151.....	2493418.....	2493418.....	3219125115.....	2426241.....	2426224 pt.....
3212113291.....	2435147.....	2435147.....	3212194161.....	2493419.....	2493419.....	3219125221.....	2426233.....	2426251 pt.....
3212113YVV.....	2435100.....	2435100.....	3212194YVV.....	2493400.....	2493400.....	3219125225.....	2426243.....	2426251 pt.....
						3219125331.....	2426235.....	2426281 pt.....
3212115.....	24352.....	24352.....				3219125335.....	2426245.....	2426281 pt.....
3212115100.....	2435200.....	2435200.....	3212195.....	24935.....	24935.....	3219125441.....	2426283.....	2426283.....
			3212195100.....	2493500.....	2493500.....			

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVW	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVW	2441100	2441100	3219925YVW	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVW	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVW	2441200	2441200	321992W	24520	24520
3219127YVW pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVW	2452000	2452000
3219127YVW pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVW	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVW	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVW pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVW pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVW pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVW pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVW pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVW pt	2439081	2439033 pt	3219207YVW pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVW pt	2499000 pt	2499000 pt	3219207YVW pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVW pt	2421002 pt	2421002 pt	3219207YVW pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVW pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVW pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVW pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVW pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVW pt	2441000	2441000	3219990144	2499451	2499451
3219181YVW	2431600	2431600	321920WYVW pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVW pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVW pt	2449000 pt	2449000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVW pt	2499000 pt	2499000 pt	3219990157	2499462	2499462
3219183YVW	2431700	2431700	321920WYVW pt	2429002 pt	2429002 pt	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVW pt	2441002	2441002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVW pt	2448002	2448002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVW pt	2449002	2449002	3219990171	2499489	2499489
3219185121	2431825	2431825	321920WYVW pt	2499002 pt	2499002 pt	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911	24511	24511	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911111	2451111	2451111	3219990191 pt	2421961	2421951 pt
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3219185YVW pt	2431800	2431800	3219911YVW	2451100	2451100	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915	24512	24512	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915111	2451222	2451222	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915121	2451230	2451230	3219990191 pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	3219915YVW	2451200	2451200	3219990YVW pt	2421000 pt	2421000 pt
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3219187251	2426141	2426141	321991WYVW	2451000	2451000	3219990YVW pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	321991WYVW	2451002	2451002	3219990YVW pt	2429000 pt	2429000 pt
3219187YVW	2426100	2426100	3219921	24521	24521	3219990YVW pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921111	2452173	2452173	3219990YVW pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921121	2452175	2452175	3219990YVW pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219921YVW	2452100	2452100	3219990YVW pt	3131000 pt	3131000 pt
321918WYVW pt	2421000 pt	2421000 pt	3219923	24522	24522	3219990YVW pt	3999000 pt	3999000 pt
321918WYVW pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVW pt	3999900 pt	3999900 pt
321918WYVW pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVW pt	2421002 pt	2421002 pt
321918WYVW pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVW pt	2429002 pt	2429002 pt
321918WYVW pt	2426002 pt	2426002 pt	3219923YVW	2452200	2452200	3219990YVW pt	2499002 pt	2499002 pt
						3219990YVW pt	3131002 pt	3131002 pt
						3219990YVW pt	3999002 pt	3999002 pt

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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	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)				
321999	All other miscellaneous wood product mfg	2 308	2 406	43 744	915 069	36 151	68 181	660 374	2 096 407	1 880 446	3 962 468	150 909
242140	Sawmills & planing mills, general (pt)	N	76	1 640	31 963	1 450	2 766	26 661	89 415	119 735	204 626	7 977
242930	Special product sawmills, n.e.c. (pt)	N	8	355	7 692	291	662	5 419	15 515	18 304	33 959	820
249930	Wood products, n.e.c. (pt)	N	2 322	41 749	875 414	34 410	64 753	628 294	1 991 477	1 742 407	3 723 883	142 112
313120	Footwear cut stock & findings (pt)	N	-	-	-	-	-	-	-	-	-	-
399915	Manufacturing industries, n.e.c. (pt)	N	-	-	-	-	-	-	-	-	-	-

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)
321999, ALL OTHER MISCELLANEOUS WOOD PRODUCT MFG												
United States	2	2 406	509	43 744	915 069	36 151	68 181	660 374	2 096 407	1 880 446	3 962 468	150 909
Alabama	1	53	11	870	19 270	717	1 368	14 536	46 536	38 668	85 536	6 760
Arizona	1	30	6	380	8 303	291	567	5 133	17 865	17 380	35 710	754
Arkansas	2	31	6	303	5 002	253	412	3 702	11 731	11 117	22 742	1 338
California	1	207	51	4 626	111 992	3 654	7 155	75 834	248 231	305 463	545 154	15 158
Colorado	2	36	3	288	5 712	234	417	4 069	11 965	6 726	18 664	784
Connecticut	1	11	2	197	5 663	168	333	4 607	8 151	16 809	24 873	215
Florida	3	70	8	617	14 201	482	905	9 273	26 184	26 598	52 901	1 236
Georgia	1	48	13	760	12 925	604	1 021	9 497	30 451	31 985	62 789	1 630
Idaho	1	24	3	180	3 854	153	301	3 005	12 221	9 583	21 715	433
Indiana	2	82	13	1 052	18 461	852	1 451	13 253	40 828	39 943	80 201	2 187
Iowa	1	30	6	599	11 162	471	844	6 529	21 604	17 410	39 251	1 860
Kansas	1	17	4	218	4 616	164	298	2 982	9 968	12 148	22 103	1 310
Kentucky	-	28	7	655	11 834	491	944	7 849	24 731	33 367	57 703	1 977
Maine	-	72	26	2 621	52 975	2 271	4 470	39 468	106 795	74 182	179 250	6 239
Maryland	4	22	2	198	4 254	159	255	2 690	9 612	9 327	18 753	595
Massachusetts	1	53	11	809	19 214	579	1 200	11 651	41 445	34 946	75 779	2 470
Minnesota	4	72	14	971	21 485	805	1 541	14 887	42 810	42 177	84 418	2 413
Mississippi	6	37	9	1 849	36 768	1 408	3 225	20 424	132 675	71 953	202 670	4 822
Missouri	3	69	21	1 465	27 251	1 178	2 278	17 819	48 896	42 606	91 103	2 442
New Hampshire	3	37	12	728	16 280	574	1 121	10 737	32 690	28 411	61 862	1 288
New Jersey	1	24	6	423	10 668	325	623	6 111	24 813	26 122	50 757	914
New York	4	95	24	1 701	36 752	1 428	2 734	26 249	74 944	61 563	137 387	3 238
North Carolina	2	94	29	1 454	31 454	1 220	2 181	21 593	65 772	66 534	132 866	3 483
Ohio	1	116	28	6 230	137 531	5 638	10 739	119 390	392 695	209 168	600 983	47 776
Oklahoma	4	21	3	202	3 121	147	200	1 810	5 721	5 458	11 353	236
Oregon	5	85	14	894	16 995	733	1 302	12 570	36 605	35 697	72 765	2 254
Pennsylvania	1	112	17	1 147	23 901	954	1 808	18 052	56 303	66 333	121 610	2 880
South Carolina	3	36	9	514	11 286	356	687	6 925	23 661	16 785	40 879	1 511
Tennessee	2	70	18	1 275	22 206	1 106	1 918	16 574	39 104	37 091	76 625	2 921
Texas	3	130	26	2 071	35 797	1 749	3 107	26 813	86 479	85 691	171 067	5 996
Utah	1	21	1	115	1 742	91	145	1 410	3 950	3 004	7 048	99
Vermont	-	37	12	926	23 457	787	1 614	17 576	45 392	69 673	114 066	2 335
Washington	2	71	10	716	14 067	595	1 022	10 444	29 276	53 807	81 777	1 494
West Virginia	1	33	8	519	8 666	445	729	6 478	27 099	17 476	44 234	3 224
Wisconsin	-	106	28	2 478	51 852	2 034	3 783	37 998	108 063	111 888	220 345	7 864

* 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
321999, ALL OTHER MISCELLANEOUS WOOD PRODUCT MFG		321999, ALL OTHER MISCELLANEOUS WOOD PRODUCT MFG—Con.	
Companies ¹	number.. 2 308	Value added	\$1,000.. 2 096 407
All establishments	number.. 2 406	Total inventories, beginning of year	\$1,000.. 531 173
Establishments with 1 to 19 employees	number.. 1 897	Finished goods inventories, beginning of year	\$1,000.. 247 478
Establishments with 20 to 99 employees	number.. 451	Work-in-process inventories, beginning of year	\$1,000.. 102 728
Establishments with 100 employees or more	number.. 58	Materials and supplies inventories, beginning of year	\$1,000.. 180 967
All employees	number.. 43 744	Total inventories, end of year	\$1,000.. 564 214
Total compensation ²	\$1,000.. 1 128 718	Finished goods inventories, end of year	\$1,000.. 259 267
Annual payroll	\$1,000.. 915 069	Work-in-process inventories, end of year	\$1,000.. 105 324
Total fringe benefits	\$1,000.. 213 649	Materials and supplies inventories, end of year	\$1,000.. 199 623
Production workers, average for year	number.. 36 151	Gross book value of total assets at beginning of year	\$1,000.. 1 212 268
Production workers on March 12	number.. 36 370	Total capital expenditures (new and used)	\$1,000.. 150 909
Production workers on May 12	number.. 36 343	Capital expenditures for buildings and other structures (new and used)	\$1,000.. 54 619
Production workers on August 12	number.. 35 921	Capital expenditures for machinery and equipment (new and used)	\$1,000.. 96 290
Production workers on November 12	number.. 36 000	Total retirements ²	\$1,000.. 22 278
Production-worker hours	1,000.. 68 181	Gross book value of total assets at end of year	\$1,000.. 1 340 899
Production-worker wages	\$1,000.. 660 374	Total depreciation during year ²	\$1,000.. 101 503
Total cost of materials	\$1,000.. 1 880 446	Total rental payments ²	\$1,000.. 49 191
Cost of materials, parts, containers, etc., consumed	\$1,000.. 1 584 703	Buildings and other structures rental payments ²	\$1,000.. 24 363
Cost of resales	\$1,000.. 204 742	Machinery and equipment rental payments ²	\$1,000.. 24 828
Cost of fuels	\$1,000.. 17 210	Cost of purchased services for the repair of buildings and other structures ³	\$1,000.. 5 905
Cost of purchased electricity	\$1,000.. 47 254	Response coverage ratio ⁴	percent.. 69
Cost of contract work	\$1,000.. 26 537	Cost of purchased services for the repair of machinery and equipment ³	\$1,000.. 29 730
Quantity of electricity purchased for heat and power	1,000 kWh.. 781 703	Response coverage ratio ⁴	percent.. 69
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D	Cost of purchased communications services ³	\$1,000.. 6 216
Total value of shipments	\$1,000.. 3 962 468	Response coverage ratio ⁴	percent.. 69
Primary products value of shipments	\$1,000.. 3 403 786	Cost of purchased legal services ³	\$1,000.. 2 516
Secondary products value of shipments	\$1,000.. 190 145	Response coverage ratio ⁴	percent.. 69
Total miscellaneous receipts	\$1,000.. 368 537	Cost of purchased accounting and bookkeeping services ³	\$1,000.. 2 859
Value of resales	\$1,000.. 341 343	Response coverage ratio ⁴	percent.. 69
Contract receipts	\$1,000.. 12 816	Cost of purchased advertising services ³	\$1,000.. 8 461
Other miscellaneous receipts	\$1,000.. 14 378	Response coverage ratio ⁴	percent.. 69
Primary products specialization ratio	percent.. 94	Cost of purchased software and other data processing services ³	\$1,000.. 2 296
Value of primary products shipments made in all industries	\$1,000.. 3 832 488	Response coverage ratio ⁴	percent.. 69
Value of primary products shipments made in this industry	\$1,000.. 3 403 786	Cost of purchased refuse removal (including hazardous waste) services ³	\$1,000.. 3 873
Value of primary products shipments made in other industries	\$1,000.. 428 702	Response coverage ratio ⁴	percent.. 69
Coverage ratio	percent.. 88		

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)				
321999, ALL OTHER MISCELLANEOUS WOOD PRODUCT MFG												
All establishments	2	2 406	509	43 744	915 069	36 151	68 181	660 374	2 096 407	1 880 446	3 962 468	150 909
Establishments with 1 to 4 employees	7	1 061	—	2 026	34 697	1 815	2 732	29 986	72 909	77 291	151 630	4 744
Establishments with 5 to 9 employees	3	433	—	2 916	53 961	2 348	3 969	40 365	111 901	107 762	220 771	8 232
Establishments with 10 to 19 employees	1	403	—	5 513	108 213	4 303	7 611	74 573	225 241	218 515	445 182	13 855
Establishments with 20 to 49 employees	2	337	337	10 290	216 158	8 345	15 249	145 995	469 868	462 043	923 763	27 739
Establishments with 50 to 99 employees	2	114	114	7 820	163 152	6 465	12 391	114 213	366 877	392 801	759 447	26 571
Establishments with 100 to 249 employees	1	49	49	7 451	163 234	6 153	12 481	116 167	316 022	325 676	636 421	17 925
Establishments with 250 to 499 employees	—	5	5	1 668	38 026	1 303	2 864	24 909	90 941	76 159	167 489	4 762
Establishments with 500 to 999 employees	4	3	3	D	D	D	D	D	D	D	D	D
Establishments with 1,000 to 2,499 employees	—	—	—	—	—	—	—	—	—	—	—	—
Establishments with 2,500 employees or more	—	1	1	D	D	D	D	D	D	D	D	D
Administrative records ²	9	901	—	2 760	41 549	2 399	3 530	32 871	80 523	80 032	161 329	5 789

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)				
321999	All other miscellaneous wood product mfg	2 406	43 744	915 069	36 151	68 181	660 374	2 096 407	1 880 446	3 962 468	150 909

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)
321999	All other miscellaneous wood products	N	X	X	3 832 488	N	X	X	N
3219990	All other miscellaneous wood products	N	X	X	3 832 488	N	X	X	N
32199901	Other wood products	N	X	X	3 160 285	N	X	X	N
3219990111	Finished wood moldings for mirrors and pictures	44	X	X	84 650	48	X	X	53 978
3219990114	Cork and cork products of natural, waste (including granulated and ground), and composition cork (except gaskets)	19	X	X	76 473	28	X	X	70 873
3219990121	Wood statuettes and other ornaments, including ashtrays, bookends, plaques, and trophies	58	X	X	74 211	45	X	X	56 667
3219990124	Wood tableware and kitchenware	30	X	X	51 900	35	X	X	49 978
3219990127	Wood fence pickets, posts, and rails assembled into fence sections	36	X	X	53 806	40	X	X	51 142
3219990131	Wood toothpicks, skewers, candy sticks, ice cream sticks, tongue depressors, drink mixers, and similar small wood wares	10	X	X	87 208	12	X	X	59 256
3219990134	Firewood and fuel wood containing an added binder, including compressed logs	14	X	X	123 354	29	X	X	72 119
3219990137	Bamboo, rattan, willow, and chip basketwork, wickerwork, and related products of fibrous vegetable substances, except furniture and laundry hampers	11	X	X	32 376	N	X	X	N
3219990141	Lasts for boots and shoes (wood and other materials), remodeled last sole patterns and forms, shoe trees, and stretchers	4	X	X	D	5	X	X	11 886
3219990144	Wood striking tool handles (axe, pick, hammer, etc.)	16	X	X	30 096	15	X	X	25 096
3219990147	Other wood handtool handles, including spade, shovel, rake, scythe, and other mechanics, farm, garden, household, etc.	15	X	X	35 615	20	X	X	30 691
3219990151	Wood broom, mop, and paintbrush handles	14	X	X	28 539	13	X	X	24 260
3219990154	Other wood handles, wood tools, tool bodies, and backs for brooms, mops, and brushes	13	X	X	21 202	16	X	X	17 834
3219990157	Wood dowels and dowel pins (plain or sanded, grooved, or otherwise advanced in condition)	30	X	X	67 920	30	X	X	51 357
3219990161	Wood stepladders	11	X	X	50 275	14	X	X	54 974
3219990164	Wood rung ladders (nonextension, extension, and scaffolding ladders)	9	X	X	6 556	18	X	X	13 762
3219990167	Wood reels for wire and cable	41	X	X	326 776	36	X	X	163 055
3219990171	Wood flour	7	X	X	42 167	8	X	X	25 703
3219990174	Wood toilet seats, including molded wood	9	X	X	153 998	7	X	X	101 008
3219990191	Miscellaneous wood products, nec	828	X	X	D	N	X	X	N
3219990Y	All other miscellaneous wood products, nsk, total	N	X	X	672 203	N	X	X	N
3219990YWW	All other miscellaneous wood products, nsk, for nonadministrative-record establishments	N	X	X	525 655	N	X	X	N
3219990YWY	All other miscellaneous wood products, nsk, for administrative-record establishments	N	X	X	146 548	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)
321999	ALL OTHER MISCELLANEOUS WOOD PRODUCT MFG				
11331015	Hardwood logs and bolts..... mil bd ft Intl 1/4 in. scale..	S	72 653	N	N
32100023	Hardwood rough lumber..... mil bd ft..	S	83 295	N	N
32100029	Softwood rough lumber..... mil bd ft..	S	102 115	N	N
32100027	Hardwood dressed lumber..... mil bd ft..	S	21 398	N	N
32100033	Softwood dressed lumber..... mil bd ft..	S	71 894	N	N
32191203	Hardwood cut stock and dimension, excluding furniture frames.....	X	30 131	X	N
32100007	Chips, slabs, edgings, shavings, sawdust, and other wood waste.....	X	33 108	X	N
32121101	Hardwood plywood..... mil sq ft sm..	S	27 547	N	N
32121201	Softwood plywood..... mil sq ft (3/8 in. basis)..	S	22 259	N	N
32121901	Reconstituted wood products, including particleboard, oriented strandboard, medium density fiberboard, and hardboard.....	X	21 266	X	N
32551003	Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products..... 1,000 gallons..	[¶] 273.1	16 005	N	N
33200005	Fabricated metal products, including forgings.....	X	23 068	X	N
32221001	Paperboard containers, boxes, and corrugated paperboard.....	X	40 060	X	N
00970099	All other materials and components, parts, containers, and supplies.....	X	194 057	X	N
00971000	Materials, ingredients, containers, and supplies, n.s.k.....	X	825 847	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: [¶] 10 to 19 percent estimated; [¶] 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

321999 ALL OTHER MISCELLANEOUS WOOD PRODUCT MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and preservation facilities; establishments manufacturing veneer, engineered wood products, millwork, wood containers, pallets, and wood container parts; and establishments making manufactured homes (i.e., mobile homes) and prefabricated buildings and components).

The data published with NAICS code 321999 include the following SIC industries:

- 2421 Sawmills and planing mills, general (pt)
- 2429 Special product sawmills, n.e.c. (pt)
- 2499 Wood products, n.e.c. (pt)
- 3131 Footwear cut stock and findings (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 321999 include establishments primarily engaged in the manufacture of wood cooling towers, but do not include establishments primarily engaged in the manufacture of finished metal moldings for mirrors and pictures, semi-machined and fully-machined softwood dimension, or cooperage headings. 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
3211131.....	24211 pt.....	24211 pt.....	3212117.....	24353.....	24353.....	3212197.....	24936.....	24936.....
321113111.....	2421111.....	2421161 pt.....	3212117111.....	2435331.....	2435331.....	3212197111.....	2493612.....	2493612.....
3211131121.....	2421115.....	2421163 pt.....	3212117291.....	2435398.....	2435398.....	3212197121.....	2493616.....	2493616.....
3211131131.....	2421121.....	2421165 pt.....	3212117YVW pt.....	2435300 pt.....	2435300.....	3212197131.....	2493617.....	2493617.....
3211131141.....	2421125.....	2421177 pt.....	3212117YVW pt.....	2435300 pt.....	2435311.....	3212197YVW.....	2493600.....	2493600.....
3211131YVW.....	2421100 pt.....	2421100 pt.....						
3211133.....	24212 pt.....	24212 pt.....	321211W.....	24350.....	24350.....	3212198.....	24937.....	24937.....
3211133111.....	2421241.....	2421212 pt.....	321211WYVW.....	2435000.....	2435000.....	3212198111.....	2493721.....	2493721.....
3211133121.....	2421244.....	2421213 pt.....	321211WYVW.....	2435002.....	2435002.....	3212198121.....	2493731.....	2493731.....
3211133131.....	2421247.....	2421215 pt.....				3212198YVW.....	2493700.....	2493700.....
3211133241.....	2421251.....	2421233 pt.....	3212121.....	24364.....	24364.....	321219W.....	24930.....	24930.....
3211133351.....	2421254.....	2421235 pt.....	3212121100.....	2436400.....	2436400.....	321219WYVW.....	2493000.....	2493000.....
3211133461.....	2421257.....	2421237 pt.....				321219WYVW.....	2493002.....	2493002.....
3211133YVW.....	2421200 pt.....	2421200 pt.....	3212123.....	24365.....	24365.....			
			3212123111.....	2436501.....	2436501.....	3219111.....	24311.....	24311.....
3211135.....	24215.....	24215.....	3212123221.....	2436505.....	2436505.....	3219111111.....	2431131.....	2431131.....
3211135111.....	2421516.....	2421516.....	3212123331.....	2436511.....	2436511.....	3219111121.....	2431132.....	2431132.....
3211135121.....	2421522.....	2421522.....	3212123441.....	2436521.....	2436521.....	3219111231.....	2431135.....	2431135.....
3211135231.....	2421518.....	2421518.....	3212123451.....	2436523.....	2436523.....	3219111241.....	2431136.....	2431136.....
3211135241.....	2421524.....	2421524.....	3212123YVW.....	2436500.....	2436500.....	3219111351.....	2431142.....	2431141 pt.....
3211135YVW.....	2421500.....	2421500.....				3219111361.....	2431143.....	2431141 pt.....
			3212125.....	24366.....	24366.....	3219111391 pt.....	2431191 pt.....	2431134.....
3211137 pt.....	24218 pt.....	24218 pt.....	3212125111.....	2436607.....	2436607.....	3219111391 pt.....	2431191 pt.....	2431145.....
			3212125121.....	2436611.....	2436611.....	3219111YVW.....	2431100.....	2431100.....
3211137 pt.....	24219 pt.....	24219 pt.....	3212125131.....	2436613.....	2436613.....			
			3212125141.....	2436615.....	2436615.....	3219113.....	24312.....	24312.....
3211137 pt.....	24290 pt.....	24290 pt.....	3212125151.....	2436617.....	2436617.....	3219113111.....	2431209.....	2431209.....
3211137111.....	2421817.....	2421817.....	3212125YVW.....	2436600.....	2436600.....	3219113121.....	2431215.....	2431215.....
3211137121.....	2421813.....	2421813.....				3219113YVW.....	2431200.....	2431200.....
3211137131 pt.....	2429011 pt.....	2429004.....	3212127.....	24367.....	24367.....			
3211137131 pt.....	2429011 pt.....	2429007.....	3212127111.....	2436703.....	2436703.....	3219115.....	24313.....	24313.....
3211137131 pt.....	2429011 pt.....	2429009.....	3212127121.....	2436721.....	2436721.....	321911511.....	2431313.....	2431313.....
3211137141.....	2421911.....	2421911.....	3212127191 pt.....	2436727 pt.....	2436723.....	3219115121.....	2431315.....	2431315.....
3211137YVW pt.....	2421800 pt.....	2421800 pt.....	3212127191 pt.....	2436727 pt.....	2436725.....	3219115YVW.....	2431300.....	2431300.....
3211137YVW pt.....	2421900 pt.....	2421900 pt.....	3212127YVW.....	2436700.....	2436700.....			
						3219117.....	24314.....	24314.....
321113W pt.....	24210 pt.....	24210 pt.....	3212129.....	24363.....	24363.....	3219117111.....	2431411.....	2431411.....
			3212129111.....	2436331.....	2436331.....	3219117115.....	2431413.....	2431413.....
321113W pt.....	24290 pt.....	24290 pt.....	3212129191.....	2436398.....	2436398.....	3219117121.....	2431419.....	2431419.....
			3212129YVW pt.....	2436300 pt.....	2436300.....	3219117131.....	2431431.....	2431431.....
321113W pt.....	24390 pt.....	24390 pt.....	3212129YVW pt.....	2436300 pt.....	2436311.....	3219117135.....	2431433.....	2431433.....
321113WYVW pt.....	2421000 pt.....	2421000 pt.....				3219117141.....	2431435.....	2431435.....
321113WYVW pt.....	2429000 pt.....	2429000 pt.....	321212W.....	24360.....	24360.....	3219117145.....	2431437.....	2431437.....
321113WYVW pt.....	2439000 pt.....	2439000 pt.....	321212WYVW.....	2436000.....	2436000.....	3219117151.....	2431441.....	2431441.....
321113WYVW pt.....	2439085.....	2439033 pt.....	321212WYVW.....	2436002.....	2436002.....	3219117155.....	2431445.....	2431445.....
321113WYVW pt.....	2421002 pt.....	2421002 pt.....				3219117161 pt.....	2431449 pt.....	2431446.....
321113WYVW pt.....	2429002 pt.....	2429002 pt.....	3212130.....	24390 pt.....	24390 pt.....	3219117161 pt.....	2431449 pt.....	2431448.....
321113WYVW pt.....	2439002 pt.....	2439002 pt.....	3212130111.....	2439011.....	2439098 pt.....	3219117171.....	2431461.....	2431400 pt.....
			3212130221.....	2439015.....	2439031.....	3219117YVW.....	2431400.....	2431400 pt.....
3211141.....	24912.....	24912.....	3212130231.....	2439021.....	2439098 pt.....			
3211141111.....	2491201.....	2491201.....	3212130241 pt.....	2439025 pt.....	2439035.....	3219119.....	24315.....	24315.....
3211141121.....	2491203.....	2491203.....	3212130241 pt.....	2439025 pt.....	2439098 pt.....	3219119111.....	2431561.....	2431561.....
3211141131 pt.....	2491208 pt.....	2491205.....	3212130YVW.....	2439000 pt.....	2439000 pt.....	3219119121.....	2431584.....	2431584.....
3211141131 pt.....	2491208 pt.....	2491207.....	3212130YVW.....	2439002 pt.....	2439002 pt.....	3219119131.....	2431585.....	2431585.....
3211141141.....	2491209.....	2491209.....				3219119141.....	2431587.....	2431587.....
3211141151.....	2491212.....	2491212.....	3212140.....	24390 pt.....	24390 pt.....	3219119151.....	2431588.....	2431597 pt.....
3211141161.....	2491214.....	2491214.....	3212140111 pt.....	2439061 pt.....	2439051 pt.....	3219119191 pt.....	2431591 pt.....	2431575.....
3211141171.....	2491216.....	2491216.....	3212140111 pt.....	2439061 pt.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431581.....
3211141YVW.....	2491200.....	2491200.....	3212140121.....	2439065.....	2439098 pt.....	3219119191 pt.....	2431591 pt.....	2431597 pt.....
			3212140131 pt.....	2439071 pt.....	2439051 pt.....	3219119YVW.....	2431500.....	2431500.....
3211145.....	24913.....	24913.....	3212140131 pt.....	2439071 pt.....	2439098 pt.....			
3211145111.....	2491302.....	2491302.....	3212140YVW.....	2439000 pt.....	2439000 pt.....	321911W.....	24310 pt.....	24310 pt.....
3211145121.....	2491305.....	2491305.....	3212140YVW.....	2439002 pt.....	2439002 pt.....	321911WYVW.....	2431000 pt.....	2431000 pt.....
3211145131.....	2491307.....	2491307.....				321911WYVW.....	2431002 pt.....	2431002 pt.....
3211145141.....	2491309.....	2491309.....	3212191.....	24931.....	24931.....			
3211145151.....	2491312.....	2491312.....	3212191111.....	2493111 pt.....	2493120.....	3219121.....	24211 pt.....	24211 pt.....
3211145161.....	2491314.....	2491314.....	3212191111 pt.....	2493111 pt.....	2493121 pt.....	321912111.....	2421135.....	2421161 pt.....
3211145171.....	2491317.....	2491317.....	3212191221 pt.....	2493115 pt.....	2493103.....	3219121121.....	2421141.....	2421163 pt.....
3211145191.....	2491321.....	2491321.....	3212191221 pt.....	2493115 pt.....	2493105.....	3219121131.....	2421145.....	2421165 pt.....
3211145YVW.....	2491300.....	2491300.....	3212191291.....	2493191.....	2493121 pt.....	3219121141.....	2421151.....	2421177 pt.....
			3212191YVW.....	2493100.....	2493100.....	3219121151 pt.....	2421155 pt.....	2421161 pt.....
3211149.....	24919.....	24919.....				3219121151 pt.....	2421155 pt.....	2421163 pt.....
3211149111.....	2491905.....	2491905.....	3212192.....	24932.....	24932.....	3219121151 pt.....	2421155 pt.....	2421165 pt.....
3211149121.....	2491907.....	2491907.....	3212192111.....	2493205.....	2493205.....	3219121151 pt.....	2421155 pt.....	2421175.....
3211149191.....	2491911.....	2491911.....	3212192121.....	2493207.....	2493207.....	3219121YVW.....	2421100 pt.....	2421100 pt.....
3211149YVW.....	2491900.....	2491900.....	3212192191 pt.....	2493291 pt.....	2493209.....			
			3212192191 pt.....	2493291 pt.....	2493221.....	3219123.....	24212 pt.....	24212 pt.....
321114W.....	24910.....	24910.....	3212192YVW.....	2493200.....	2493200.....	3219123111.....	2421264.....	2421212 pt.....
321114WYVW.....	2491000.....	2491000.....				3219123121.....	2421267.....	2421213 pt.....
321114WYVW.....	2491002.....	2491002.....	3212193.....	24933.....	24933.....	3219123131.....	2421271.....	2421215 pt.....
			3212193111 pt.....	2493311 pt.....	2493314 pt.....	3219123141.....	2421274.....	2421233 pt.....
3212111.....	24354.....	24354.....	3212193111 pt.....	2493311 pt.....	2493316 pt.....	3219123151.....	2421277.....	2421235 pt.....
3212111111.....	2435419.....	2435419.....	3212193191 pt.....	2493391 pt.....	2493314 pt.....	3219123161.....	2421281.....	2421237 pt.....
3212111221.....	2435415.....	2435415.....	3212193191 pt.....	2493391 pt.....	2493316 pt.....	3219123171 pt.....	2421284 pt.....	2421212 pt.....
3212111231.....	2435417.....	2435417.....	3212193YVW.....	2493300.....	2493300.....	3219123171 pt.....	2421284 pt.....	2421213 pt.....
3212111241.....	2435421.....	2435421.....				3219123171 pt.....	2421284 pt.....	2421215 pt.....
3212111251.....	2435427.....	2435427.....	3212194.....	24934.....	24934.....	3219123171 pt.....	2421284 pt.....	2421231.....
3212111261.....	2435431.....	2435431.....	3212194111.....	2493412.....	2493412.....	3219123YVW.....	2421200 pt.....	2421200 pt.....
3212111YVW.....	2435400.....	2435400.....	3212194121.....	2493414.....	2493414.....			
			3212194131.....	2493416.....	2493416.....	3219125.....	24262.....	24262.....
3212113.....	24351.....	24351.....	3212194141.....	2493417.....	2493417.....	3219125111.....	2426231.....	2426224 pt.....
3212113111.....	2435101.....	2435101.....	3212194151.....	2493418.....	2493418.....	3219125115.....	2426241.....	2426224 pt.....
3212113221.....	2435105.....	2435105.....	3212194161.....	2493419.....	2493419.....	3219125221.....	2426233.....	2426251 pt.....
3212113231.....	2435107.....	2435107.....	3212194YVW.....	2493400.....	2493400.....	3219125225.....	2426243.....	

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3219125444	2426285	2426285	321918WYWW pt ...	2431002 pt	2431002 pt	3219925	24523	24523
3219125447	2426286	2426286	3219201	24411	24411	3219925111	2452333	2452333
3219125451	2426287	2426287	3219201111	2441127	2441127	3219925121	2452335	2452335
3219125YVV	2426200	2426200	3219201163	2441163	2441163	3219925131	2452337	2452337
3219127 pt	24217	24217	3219201YVV	2441100	2441100	3219925YVV	2452300	2452300
3219127 pt	24994 pt	24994 pt	3219203	24412	24412	3219927	24524	24524
3219127111	2421711	2421711	3219203111	2441211	2441211	3219927111	2452441	2452441
3219127121	2421751	2421751	3219203121	2441215	2441215	3219927221	2452447	2452447
3219127131 pt	2499493 pt	2499491 pt	3219203131	2441225	2441225	3219927YVV	2452400	2452400
3219127131 pt	2499493 pt	2499498 pt	3219203YVV	2441200	2441200	321992W	24520	24520
3219127YVV pt	2421700	2421700	3219205	24480 pt	24480 pt	321992WYVV	2452000	2452000
3219127YVV pt	2499400 pt	2499400 pt	3219205111	2448062	2448062	321992WYVV	2452002	2452002
3219129 pt	24218 pt	24218 pt	3219205221	2448065	2448065	3219990 pt	24210 pt	24210 pt
3219129 pt	24219 pt	24219 pt	3219205231	2448066	2448066	3219990 pt	24218 pt	24218 pt
3219129111	2421825	2421825	3219205241	2448064	2448064	3219990 pt	24219 pt	24219 pt
3219129121	2421823	2421823	3219205YVV	2448000 pt	2448000 pt	3219990 pt	24290 pt	24290 pt
3219129131	2421971	2421951 pt	3219207 pt	24290 pt	24290 pt	3219990 pt	24290 pt	24290 pt
3219129YVV pt	2421800 pt	2421800 pt	3219207 pt	24490 pt	24490 pt	3219990 pt	24990 pt	24990 pt
3219129YVV pt	2421900 pt	2421900 pt	3219207 pt	24994 pt	24994 pt	3219990 pt	24991 pt	24991 pt
321912W pt	24210 pt	24210 pt	3219207111	2449011	2449011	3219990 pt	24992	24992
321912W pt	24260 pt	24260 pt	3219207121	2449021	2449021	3219990 pt	24992	24992
321912W pt	24390 pt	24390 pt	3219207131	2449043	2449043	3219990 pt	24994 pt	24994 pt
321912W pt	24990 pt	24990 pt	3219207141	2449073	2449073	3219990 pt	24994 pt	24994 pt
321912WYVV pt	2421000 pt	2421000 pt	3219207151	2449011	2449011	3219990 pt	31310 pt	31310 pt
321912WYVV pt	2426000 pt	2426000 pt	3219207191 pt	2429021	2429087 pt	3219990 pt	39990 pt	39990 pt
321912WYVV pt	2439000 pt	2439000 pt	3219207191 pt	2449061	2449061	3219990 pt	39999 pt	39999 pt
321912WYVV pt	2439081	2439033 pt	3219207YVV pt	2499481	2499498 pt	3219990111	2499131	2499131
321912WYVV pt	2499000 pt	2499000 pt	3219207YVV pt	2449000 pt	2449000 pt	3219990114	2499200	2499200
321912WYVV pt	2421002 pt	2421002 pt	3219207YVV pt	2499400 pt	2499400 pt	3219990121	2499414	2499414
321912WYVV pt	2426002 pt	2426002 pt	321920W pt	24290 pt	24290 pt	3219990124	2499416	2499416
321912WYVV pt	2439002 pt	2439002 pt	321920W pt	24410 pt	24410 pt	3219990127	2499417	2499417
321912WYVV pt	2499002 pt	2499002 pt	321920W pt	24480 pt	24480 pt	3219990131	2499419	2499419
3219181	24316	24316	321920W pt	24490 pt	24490 pt	3219990134	2499423	2499423
3219181111	2431621	2431621	321920W pt	24990 pt	24990 pt	3219990137	2499426	2499425 pt
3219181121	2431631	2431631	321920WYVV pt	2429000 pt	2429000 pt	3219990141	2499441	2499441
3219181131	2431651	2431651	321920WYVV pt	2441000	2441000	3219990144	2499451	2499451
3219181YVV	2431600	2431600	321920WYVV pt	2448000 pt	2448000 pt	3219990147	2499454	2499454
3219183	24317	24317	321920WYVV pt	2499000 pt	2499000 pt	3219990151	2499457	2499457
3219183111	2431725	2431725	321920WYVV pt	2449000 pt	2449000 pt	3219990154	2499458	2499458
3219183121	2431771	2431771	321920WYVV pt	2499000 pt	2499000 pt	3219990157	2499462	2499462
3219183YVV	2431700	2431700	321920WYVV pt	2429002 pt	2429002 pt	3219990161	2499471	2499471
3219185 pt	24218 pt	24218 pt	321920WYVV pt	2441002	2441002	3219990164	2499475	2499475
3219185 pt	24318	24318	321920WYVV pt	2448002	2448002	3219990167	2499485	2499485
3219185111	2431821	2431821	321920WYVV pt	2449002	2449002	3219990171	2499489	2499489
3219185121	2431825	2431825	321920WYVV pt	2499002 pt	2499002 pt	3219990174	2499497	2499497
3219185131	2431835	2431835	3219911	24511	24511	3219990191 pt	2421896	2421896
3219185141	2431873	2431873	3219911111	2451111	2451111	3219990191 pt	2421961	2421951 pt
3219185151	2431877	2431877	3219911121 pt	2451112 pt	2451113	3219990191 pt	2429031	2429087 pt
3219185161	2421811	2421811	3219911121 pt	2451112 pt	2451115	3219990191 pt	2499496 pt	2499425 pt
3219185191 pt	2431891 pt	2431833	3219911231	2451114	2451117 pt	3219990191 pt	2499492	2499491 pt
3219185191 pt	2431891 pt	2431898	3219911241	2451116	2451117 pt	3219990191 pt	2499496 pt	2499498 pt
3219185YVV pt	2421800 pt	2421800 pt	3219911351	2451118	2451118	3219990191 pt	3131033	3131061 pt
3219185YVV pt	2431800	2431800	3219911YVV	2451100	2451100	3219990191 pt	3999994 pt	3999913 pt
3219187	24261	24261	3219915	24512	24512	3219990191 pt	3999994 pt	3999942 pt
3219187111	2426111	2426111	3219915111	2451222	2451222	3219990191 pt	3999931	3999999 pt
3219187121	2426121	2426121	3219915121	2451230	2451230	3219990191 pt	3999994 pt	3999999 pt
3219187131	2426123	2426123	3219915YVV	2451200	2451200	3219990YVV pt	2421000 pt	2421000 pt
3219187241	2426131	2426131	321991W	24510	24510	3219990YVV pt	2421800 pt	2421800 pt
3219187251	2426141	2426141	321991WYVV	2451000	2451000	3219990YVV pt	2421900 pt	2421900 pt
3219187291	2426198	2426198	321991WYVV	2451002	2451002	3219990YVV pt	2429000 pt	2429000 pt
3219187YVV	2426100	2426100	3219921	24521	24521	3219990YVV pt	2499000 pt	2499000 pt
321918W pt	24210 pt	24210 pt	3219921111	2452173	2452173	3219990YVV pt	2499100 pt	2499100 pt
321918W pt	24260 pt	24260 pt	3219921121	2452175	2452175	3219990YVV pt	2499400 pt	2499400 pt
321918W pt	24310 pt	24310 pt	3219921YVV	2452100	2452100	3219990YVV pt	3131000 pt	3131000 pt
321918WYVV pt	2421000 pt	2421000 pt	3219923	24522	24522	3219990YVV pt	3999000 pt	3999000 pt
321918WYVV pt	2426000 pt	2426000 pt	3219923111	2452217	2452217	3219990YVV pt	3999900 pt	3999900 pt
321918WYVV pt	2431000 pt	2431000 pt	3219923121	2452219	2452219	3219990YVV pt	2421002 pt	2421002 pt
321918WYVV pt	2421002 pt	2421002 pt	3219923131	2452223	2452223	3219990YVV pt	2429002 pt	2429002 pt
321918WYVV pt	2426002 pt	2426002 pt	3219923YVV	2452200	2452200	3219990YVV pt	2499002 pt	2499002 pt
						3219990YVV pt	3131002 pt	3131002 pt
						3219990YVV pt	3999002 pt	3999002 pt

