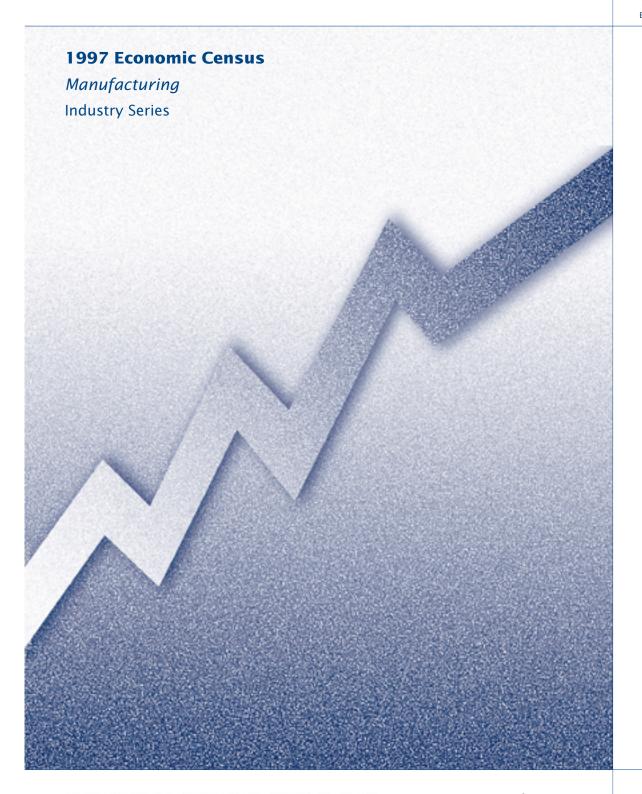
Other Motor Vehicle Electrical and Electronic Equipment Manufacturing

1997

ssued October 1999

EC97M-3363D





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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**

Health Care and Social Assistance 62

Arts. Entertainment, and Recreation 71

72 Accommodation and Foodservices

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 Service Sector Statistics Division

301-457-4673 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/econquide. 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:

- Α 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 rev-
- Ν Not available or not comparable.
- Revenue not collected at this level of detail for Q multiestablishment firms.
- S Withheld because estimates did not meet publication standards.

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

1997 ECONOMIC CENSUS INTRODUCTION 3 This page is intentionally blank.

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

U.S. Census Bureau, 1997 Economic Census

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, semiindependent 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			All	All em	ployees	Production workers						Total capital
or SIC code	Industry	Com- panies ¹	estab- lish- ments ²	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)	Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	
336322	Other motor vehicle electrical & electronic equipment mfg	950	1 021	95 617	3 059 067	75 419	144 797	2 127 720	7 048 604	9 816 731	16 973 014	694 885
367940	Electronic components, n.e.c.	555				10 410	144 757	2 121 120		0 010 701	10 070 014	004 000
369400 371430	(pt) Engine electrical equipment Motor vehicle parts &		252 570	12 896 52 232	368 235 1 642 394	9 100 41 928	17 870 81 035	191 894 1 187 878		701 395 5 018 404	1 450 716 9 075 617	
	accessories (pt)	N	199	30 489	1 048 438	24 391	45 892	747 948	2 275 099	4 096 932	6 446 681	239 147

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]

			All	All em	oloyees	Pr	oduction work	oduction workers				
Industry and geographic area	E¹	Total	With 20 em- ploy- ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)	Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)
336322, OTHER MOTOR VEHICLE ELECTRICAL & ELECTRONIC EQUIPMENT MFG												
United States	-	1 021	455	95 617	3 059 067	75 419	144 797	2 127 720	7 048 604	9 816 731	16 973 014	694 885
Arkansas. California Colorado Florida Indiana	4	8 157 12 37 51	4 59 3 11 28	1 181 6 557 159 1 853 6 996	18 714 170 537 4 433 40 182 288 212	920 5 019 132 1 414 6 046	1 750 10 169 250 2 765 10 366	13 435 101 898 2 646 23 605 244 381	57 285 313 927 6 044 86 931 465 343	62 257 270 852 6 311 90 462 827 174	114 287 588 270 12 866 178 917 1 298 801	1 602 31 488 587 5 456 50 323
lowa . Kansas . Massachusetts . Missouri . New Hampshire .	- 4 2	15 15 36 24 8	9 5 12 8 4	1 489 1 691 869 628 149	43 361 36 458 30 203 15 790 4 159	1 271 1 092 521 405 104	2 707 1 923 1 006 682 341	33 502 21 259 12 984 6 197 2 231	70 324 58 750 71 195 30 709 5 683	77 344 147 923 96 391 27 000 4 780	145 642 211 302 166 653 57 831 10 874	4 012 5 157 5 059 1 951 302
North Carolina	- - 7	15 13 63 8	5	1 535 1 671 4 620 104	39 600 36 530 108 180 2 365	1 171 1 422 3 583 88	2 499 3 501 6 346 161	21 999 25 078 66 057 1 586	139 838 44 283 443 300 4 617	133 280 95 157 479 360 4 276	267 028 136 548 908 691 8 995	16 693 5 757 24 716 352

^{*} 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
336322, OTHER MOTOR VEHICLE ELECTRICAL & ELECTRONIC EQUIPMENT MFG		336322, OTHER MOTOR VEHICLE ELECTRICAL & ELECTRONIC EQUIPMENT MFG—Con.	
Companies ¹ number	950	Value added	7 048 604
All establishments	1 021 566 272 183	Work-in-process inventories, beginning of year\$1,000	1 978 889 576 032 563 612 839 245
All employees number Total compensation ² \$1,000 Annual payroll \$1,000 Total fringe benefits \$1,000	95 617 4 054 909 3 059 067 995 842	Materials and supplies inventories, end of year \$1,000.	1 832 487 520 487 511 478 800 522
Production workers, average for year	75 419 75 932		4 475 700 694 885
Production workers on May 12	75 408 74 679	(new and used)\$1,000 Capital expenditures for machinery and equipment (new	59 679
Production workers on November 12 number. Production-worker hours 1,000. Production-worker wages \$1,000.	75 657 144 797 2 127 720	and used)	635 206 273 756 4 896 829
	_	Total depreciation during year ² \$1,000	463 411
Total cost of materials . \$1,000 . Cost of materials, parts, containers, etc., consumed . \$1,000 . Cost of resales . \$1,000 . Cost of fuels . \$1,000 . Cost of purchased electricity . \$1,000 . Cost of contract work . \$1,000 . Cost of contract work . \$1,000 .	9 816 731 8 569 906 931 864 24 133 100 579 190 249	Total rental payments ²	106 482 49 538 56 944
Quantity of electricity purchased for heat and power1,000 kWh Quantity of electricity generated less sold for heat and power1,000 kWh	1 720 794 1 374	Cost of purchased services for the repair of machinery and	14 378 79
Total value of shipments\$1,000	16 973 014	equipment ³ \$1,000	82 311 79
Primary products value of shipments \$1,000 . Secondary products value of shipments \$1,000 . Total miscellaneous receiots \$1,000 .	14 079 861 1 453 529 1 439 624	Cost of purchased communications services ³ \$1,000 Response coverage ratio ⁴ percent	35 823 79 5 889
Value of resales\$1,000 Contract receipts\$1,000	1 235 070 162 535	Response coverage ratio ⁴ percent percent Cost of purchased accounting and bookkeeping services ³ \$1,000	79 3 645
Other miscellaneous receipts\$1,000. Primary products specialization ratio percent.	42 019 90	Cost of purchased advertising services ³ \$1,000 Response coverage ratio ⁴	79 17 510 79
Value of primary products shipments made in all industries\$1,000 Value of primary products shipments made in this industry\$1,000 Value of primary products shipments made in other	15 612 890 14 079 861	services ³ \$1,000 Response coverage ratio ⁴ percent	67 242 79
industries	1 533 029	services ³ \$1,000	10 305
Coverage ratio percent	90	Response coverage ratio* percent	79

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

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.

Table 4. Industry Statistics by Employment Size: 1997

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

			All	All em	ployees	Pr	oduction work	ers				
Employment size class	E ¹	Total	With 20 em- ploy- ees or more	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)	Value added by manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)
336322, OTHER MOTOR VEHICLE ELECTRICAL & ELECTRONIC EQUIPMENT MFG												
All establishments	-	1 021	455	95 617	3 059 067	75 419	144 797	2 127 720	7 048 604	9 816 731	16 973 014	694 885
Establishments with 1 to 4 employees	8	284	-	611	20 722	492	789	12 594	24 112	29 183	54 762	5 616
employees	9	143	-	958	22 899	746	1 213	13 974	40 952	44 629	87 567	3 525
employees		139	-	1 975	52 561	1 484	2 621	29 770	102 939	108 171	214 445	8 286
employees		170	170	5 381	141 480	3 892	7 313	74 818	281 926	276 406	573 816	26 702
employees	4	102	102	7 275	184 625	5 365	10 186	103 298	359 120	361 223	728 024	28 143
employees	2	104	104	17 208	399 449	13 266	23 556	236 503	937 393	1 139 084	2 077 675	81 768
Establishments with 250 to 499 employees	-	40	40	14 494	340 553	11 473	21 657	220 511	896 712	1 167 664	2 029 120	70 592
employees	_	26	26	19 329	578 396	16 375	34 278	458 865	1 442 754	1 630 106	3 059 610	173 472
Establishments with 1,000 to 2,499 employees	_	10	10	D	D	D	D	D	D	D	D	D
Establishments with 2,500 employees or more	_	3	3	D	D	D	D	D	D	D	D	D
Administrative records ²	9	379	_	2 356	47 642	1 943	3 125	32 021	87 925	111 138	202 389	8 415

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.

2 Some 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	[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]													
NAICS industry or		All	All emp	oloyees	Production workers			Value added			Total capital			
product class code	Industry or primary product class	estab- lish- ments	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)	manufacture (\$1,000)	Cost of materials (\$1,000)	Value of shipments (\$1,000)	expendi- tures (\$1,000)			
336322	Other motor vehicle electrical & electronic													
	equipment mfg	1 021	95 617	3 059 067	75 419	144 797	2 127 720	7 048 604	9 816 731	16 973 014	694 885			
3363221 3363223	Ignition harness and cable sets Battery charging alternators,	54	7 897	151 181	6 764	12 610	107 605	272 489	396 440	671 637	16 040			
3363225	generators, and regulators Cranking motors (starters)	65 39	11 881 6 468	326 978 202 100	9 863 5 201	19 701 11 216	253 097 150 066	773 631 470 429	887 936 698 298	1 634 049 1 158 354	53 621 86 002			
3363227 3363229	Spark plugs (all types)	2	D	D	D	D	D	D	D	D	D			
	equipment, nec	26	14 211	660 209	10 727	19 830	471 450	1 883 091	2 453 351	4 384 049	179 055			
336322A	Parts for engine electrical and electronic equipment	28	4 042	103 713	3 013	5 923	59 961	286 642	276 688	562 484	22 431			
336322C	Motor vehicle electrical and electronic equipment, except engine electrical													
	equipment	81	29 903	1 037 484	23 786	45 476	739 993	2 279 814	4 139 113	6 487 696	249 781			

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]

- Introductory toxic	. For explanation of terms, see appendixes]		19	997			19	992	
NAICS		Number of		Product	shipments	Number of		Product	shipments
product	Product	companies with shipments of \$100,000 or more	Quantity of production for all purposes	Quantity	Value (\$1,000)	companies with shipments of \$100,000 or more	Quantity of production for all purposes	Quantity	Value (\$1,000)
336322	Motor vehicle electrical and electronic equipment, nec	N	х	x	15 612 890	N	x	х	N
3363221	Ignition harness and cable sets	N	Х	Х	860 966	N	x	X	936 297
33632211 3363221101 3363221104	Ignition harness sets, all types	N 17	X X	X X	550 924 457 594 93 330	N 28 17	X X X	X X X	N 639 213 73 706
33632212 3363221201	Engine electrical cable sets, all types	N	X	×	224 711	N N	x	X	N
3363221204	sets	23	X	X	195 853	18	x	X	155 929
3363221Y	cable sets Ignition harness and cable sets, nsk	13 N	X X X	X X X	28 858 85 331	6 N	x x	X	23 408 N
3363221YWV 3363223	Ignition harness and cable sets, nsk				85 331	N	X	X	44 041
33632231	and regulators	N	Х	X	2 185 691	N	×	Х	1 148 964
3363223101	generators for internal combustion engines New automotive battery charging	N	Х	Х	1 458 543	N	x	Х	N
3363223104	alternators and generators for internal combustion engines	18	Х	x	1 385 008	11	x	Х	622 342
	alternators and generators for internal combustion engines, new	14	х	Х	73 535	11	x	Х	44 309
33632232	Rebuilt battery charging alternators and generators for internal combustion engines, all types, and regulators for		V					· ·	
3363223201	alternators and generators Rebuilt battery charging alternators and generators for internal combustion	N	X	X	629 919	N	X	X	N
3363223204	engines, all types Regulators for battery charging alternators and generators (new and rebuilt).	68	X	×	602 841	74	x x	X X	405 612 15 719
3363223Y	Battery charging alternators, generators,		^	^	2. 0.0			,	10 1 10
3363223YWV	and regulators, nsk Battery charging alternators, generators, and regulators, nsk	N N	X X	X X	97 229 97 229	N N	x x	X X	N 60 982
3363225	Cranking motors (starters)	N	Х	X	752 272	N N	x	Х	902 292
33632251 3363225101	New starting (engine cranking) motors	N	Х	х	348 439	N	x	Х	N
3363225104	motors, new Other new starting (engine cranking) motors	10	X X	X X	D D	13 11	x x	X X	484 437 75 820
33632252	Rebuilt starting (engine cranking) motors,								
3363225201	all types	N 59	X X	X	325 953 325 953	N 68	x x	X X	N 324 660
3363225Y 3363225YWV	Cranking motors (starters), nsk	N N	X	X	77 880 77 880	N N	×	X	N 17 375
3363227	Spark plugs (all types)	N	х	Х	479 376	N	x	Х	411 786
33632271 3363227100	Spark plugs (all types) Spark plugs (all types)	N 6	X X	X	479 376 479 376	N 6	XX	X	N 411 786
3363229	Complete engine electrical equipment, nec	N	Х	x	3 084 558	N	x	Х	2 524 165
33632291 3363229101	Electrical ignition coils (all types) for complete engines	N	х	x	595 079	N	x	Х	N
	types)	16	Х	Х	595 079	13	x	Х	335 794
33632292 3363229201	Electronic systems for complete engine control, using computers or microprocessors Electronic systems for complete engine	N	Х	х	1 347 571	N	x	х	N
0000223201	control, using computers or microprocessors	10	Х	х	1 347 571	11	x	Х	N
33632293	All other complete engine electrical and-or electronic equipment	N	Х	×	942 768	N	x	X	N
3363229301 3363229304	Electrical distributors (all types) Magnetos, magneto-dynamos, and magnetic flywheels	8	x x	x x	164 711 D	15	x x	x x	260 273 60 564
3363229307	All other complete ignition equipment, including electronic ignitions		X	X	D	14	×	X	252 216
3363229309	All other complete electrical and-or electronic equipment for internal combustion engines	14	Х	x	622 484	6	x	Х	N
3363229Y	Complete engine electrical equipment, nec, nsk	N	Х	x	199 140	N	×	х	N
3363229YWV	Complete engine electrical equipment, nec, nsk	_N	X	x	199 140	l N	x	Х	24 686

See footnotes at end of table.

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]

introductory text.	For explanation of terms, see appendixes]		10	007			11	002	
			18	997			13	992	
NAICS product	Product	Number of companies		Product	shipments	Number of companies		Product	shipments
code	1.0000	with shipments	Quantity of			with shipments	Quantity of		
		\$100,000 or more	production for all purposes	Quantity	Value (\$1,000)	\$100,000 or more	production for all purposes	Quantity	Value (\$1,000)
336322	Motor vehicle electrical and electronic equipment, nec — Con.							,	<u> </u>
336322A	Parts for engine electrical and electronic equipment	N	Х	x	526 563	N	Х	x	430 237
336322A1	Armatures, field coils, and drive-end housings for cranking motors	N	X	x	16 844	N	X	x	N
336322A101	Armatures, field coils, and drive-end housings for cranking motors	10	×	x	16 844	12	×	x	41 344
336322A2	Armatures and field coils for alternators				4 700		v		
336322A204	and generators	N O	X	X	4 792	N	X	X	N 04 404
	and generators	6	Х	X	4 792	9	Х	X	31 481
336322A3 336322A307	Ignition distributor heads and rotors Ignition distributor heads and rotors	N 6	X X	X	184 777 184 777	N 8	X X	X	N 116 925
336322A4 336322A409	Ignition distributor breaker point sets Ignition distributor breaker point sets	N 4	X	X	D D	N 4	X	X	N N
336322A5	Ignition distributor condensers						v		
336322A512	(capacitors) Ignition distributor condensers	N a	X	X	D	N A	X	X	N
	(capacitors)	2	Х	X	D	4	X	X	N
336322A6	Other parts for engine electrical and-or electronic equipment	N	Х	X	292 961	N	Х	X	N
336322A615	Other parts for engine electrical and-or electronic equipment	32	Х	X	292 961	21	Х	X	213 089
336322AY	Parts for engine electrical and-or								
336322AYWV	electronic equipment, nsk	N	X	X	22 111	N	X	X	N
	electronic equipment, nsk	N	Х	Х	22 111	N	Х	X	515
336322C	Motor vehicle electrical and electronic equipment, except engine electrical equipment @	N	Х	x	6 091 519	N	Х	x	N
336322C1	Motor vehicle electrical and electronic								
336322C102	equipment, new and rebuilt	N 10	X	X	6 091 519 265 918	N 13	X	X	N 229 325
336322C104	Motor vehicle permanent defrosters, new	1	Х	Х	D	N	Х	X	N
336322C107	Motor vehicle wiring harness sets, except ignition, new	24	Х	х	D	N	Х	x	N
336322C111	Motor vehicle windshield washer-wiper mechanisms, including washer pumps,	11	Х	x	247 004	N	х	×	N
336322C114	new Motor vehicle block and battery heaters, new	''	X	×	247 004 D	N	×	×	N N
336322C117	Other motor vehicle heaters, heater	' '	^	^			^	^	N
336322C119	cores, and other heater parts, new Electronic control modular chips for	9	X	X	422 963	N	Х	X	N
336322C121	motor vehicles	15	X	X	367 825	N	X	X	N
336322C122	assemblies, new	6	Х	Х	80 753	N	Х	X	N
336322C124	engine electrical equipment), new	47	X X	X X X	1 459 459 D	N N	X X X	X X	N N
336322C127 336322C130	Windshield washer-wiper units, rebuilt Other rebuilt electrical equipment,	6	Х		D	N		X	N
	except engine electrical equipment	9	Х	X	166 545	N	Х	X	N
336322CY	Motor vehicle electrical and electronic equipment, nsk	N N	Х	x	_	N	х	x	N
336322CYWV	Motor vehicle electrical and electronic equipment, nsk	N N	X	x	_	N N	X	x	N
336322W	Motor vehicle electrical and electronic equipment, nsk, total	N	Х	x	1 631 945	N	Х	x	N
336322WY	Motor vehicle electrical and electronic			_					
336322WYWW	equipment, nsk, total Motor vehicle electrical and electronic equipment, nsk, for nonadministrative-	N	X	X	1 631 945	N	X	X	N
336322WYWY	record establishments Motor vehicle electrical and electronic equipment, nsk, for administrative- record establishments	N N	X X	×	1 444 907 187 038	N N	X X	X X	N N
	record establishinetits	IN I		Α.	107 038	l in	^	^	IN

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.

[#] 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 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	Product class and geographic area	Value of prod (\$1,	uct shipments 000)
code	3-3-4	1997	1992
3363221	IGNITION HARNESS AND CABLE SETS		
	United States	860 966	936 297
	Illinois Indiana	45 789 55 099	46 754 89 000
	lowa Mississippi	43 282 101 617	N 78 470
	Ohio	131 171	N N
	Pennsylvania	28 488 21 141	N N
	Wisconsin	11 016	12 363
3363223	BATTERY CHARGING ALTERNATORS, GENERATORS, AND REGULATORS		
	United States	2 185 691	1 148 964
	Alabama	7 083	N 20 500
	California	38 294 53 651	63 593 33 585
	Indiana Kentucky	729 969 35 029	N 12 410
	Missouri	14 300 3 799	N N
	Oregon South Carolina	2 958 28 535	2 513 N
	Texas Wisconsin	28 635 13 187	23 057 N
		13 107	14
3363225	CRANKING MOTORS (STARTERS)	750.070	000 000
	United States	752 272	902 292
	California	25 586 33 796	36 153 26 370
	Kentucky	31 965 5 272	20 041 8 048
	Pennsylvania	3 167	19 051
	Tennessee	14 958 20 238	N 7 315
3363227	SPARK PLUGS (ALL TYPES)		
	United States	479 376	411 786
3363229	COMPLETE ENGINE ELECTRICAL EQUIPMENT, NEC		
	United States	3 084 558	2 524 165
	Illinois	4 270	13 570
	Ohio	74 313	31 482
336322A	PARTS FOR ENGINE ELECTRICAL AND ELECTRONIC EQUIPMENT		
	United States	526 563	430 237
	Alabama Pennsylvania	9 442 9 271	N N
336322C	MOTOR VEHICLE ELECTRICAL AND ELECTRONIC EQUIPMENT, EXCEPT ENGINE ELECTRICAL EQUIPMENT @		
	United States	6 091 519	N
	Illinois	446 062	N
	Indiana Michigan	288 160 1 247 262	N N
	Minnesota	37 184	N
	New York	55 147	N
	North Carolina Pennsylvania	106 800 130 633	N N
	Tennessee	22 966 83 275	N 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		1997		1992	
material code	Material consumed	Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
336322	OTHER MOTOR VEHICLE ELECTRICAL & ELECTRONIC EQUIPMENT MFG				
32721203 33441200 001900C4	Tube blanks	X	301 117	N N	N N
33441300	with inserted electronic components) Semiconductors, including transistors, diodes, rectifiers, and integrated	X	D	N	N
33441400	circuits for electronic circuitry Capacitors for electronic circuitry	X	847 687 156 522	N N	N N
33441500 001900D3	Resistors for electronic circuitry	X	116 940	N	N
32518835 33141911	tubes. Silicon, hyperpure. Gold and other precious metals, all forms (including ingot, sheet, strip,	X	218 254	N N	N N
33141917	solder, plating, electrodes, etc.) Doped chemicals, and other doped materials for electronic use	X	31 –	N N	N N
33111107 331000AA	Ferrites (powder and paste)	X	_	N N	N N
33410001 33593101	Metal powders. Electronic computing equipment Current-carrying wiring devices	X	43 83 083	N N	N N
33422001	Electronic communication equipment	X	D	N	N
33451501 33331401	Electrical instrument mechanisms and meter movements (including instrument relays). Optical instruments and lenses (except sighting, tracking, and fire control)	X	1 133	N N	N N
32521105	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc.	×	175 239	N	N
32610011 332000A9	Fabricated plastics products (except gaskets) Sheet metal products, except stampings	X	423 615 101	N N	N N
332000AC 33272203	Metal stampings	X	4 518	N	N
33200033	products	X	373 363 D	N N	N N
33210001 33100035	Forgings . Castings (rough and semifinished)	X	D D	N N	N N
33120001	Steel shapes and forms (except castings, forgings, and fabricated metal products)	x	146 300	N	N
33142111 33100039	Copper and copper-base alloy shapes and forms (except castings, forgings, and fabricated metal products) Aluminum and aluminum-base alloy shapes and forms (except castings,	x	315 636	N	N
33100039	forgings, and fabricated metal products) Other nonferrous shapes and forms (except castings, forgings, and	x	21 580	N	N
331000A7	fabricated metal products) Insulated wire and cable, including magnet wire.	X	D 2 609	N N	N N
32220017	Paper and paperboard containers, including shipping sacks and other paper				
33141957	packaging supplies. Silicon chips	X	950 D	N N	N N
32599217 32512005 32611305	Masks Commodity gases. Resists (photosensitive resin films applied to the surface of a wafer)	X X X	D D	N N N	N N N
32518843	Speciality gases	x	_	N	N
33200095 33151001	Iron and steel castings (rough and semifinished)	X	60 793 27 110	X N	N N
33152005 33152003	Aluminum and aluminum-base alloy castings (rough and semifinished) Other nonferrous castings (rough and semifinished)	X	55 992 1 399	N N	N N
33100075	All other nonferrous shapes and forms (except castings, forgings, and fabricated metal products)	x	48 324	x	30 388
33100099 33100097	Insulated wire and cable (except magnet wire)	X	107 205 53 726	X X X X	108 652 48 374
33299101 33361200	Ball and roller bearings (mounted or unmounted) Mechanical speed changers, gears, and industrial high-speed drives	X	42 565 D	X	37 242 34 114
32221001 32610013	Paperboard containers, boxes, and corrugated paperboard	x	50 441	Х	35 243
32610007	other shapes	X	20 766 197 179	N X	N 60 668
32600017 00190033	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets. Used engine electrical equipment for rebuilding, or to be used in rebuilding (starting motors, generators, etc.)	X X	134 587 127 398	N X	N 79 027
33399601	Fluid power pumps, motors, and hydrostatic transmissions (hydraulic and				19 021
33291207	pneumatic)	X	D D	N N	N N
33399501 33291203 33399901	Fluid power cylinders and rotary actuators (hydraulic and pneumatic) Fluid power hose or tube fittings and assemblies (hydraulic and pneumatic) Fluid power filters (hydraulic and pneumatic)	X X X	D D D	N N N	N N N
00190089		x	-	N	N
33637000 33200019	Other fluid power products (hydraulic and pneumatic) Automotive stampings (including body parts, hubcaps, fenders, etc.) Other fabricated metal products, except fluid power and forgings.	X	48 677 17 142	N N	N N
33120007	Steel bars, bar shapes, and plates (except castings, forgings, and fabricated metal products)	x	6 160	N	N
33120017 33120033	Steel sheet and strip, including tin plate	X	40 910	N	N
33299105	metal products). Ball bearings (mounted or unmounted)	×	15 776 12 038	N N	N N
33299103 32622001	Roller bearings (mounted or unmounted) Rubber and plastics hose and belting.	x x	D 3 368	N N	N N
32500023	Ceramic raw materials, including powders, chemicals, and fibers (excluding refractory uses).	x	D	N	N
32700035	Ceramic and ceramic composite parts, components, and accessories	x	D	N	N
33999103 32551003	Gaskets (all types), and packing and sealing devices Paints, varnishes, lacquers, stains, shellacs, japans, enamels, and allied products	X X	6 416 8 339	N N	N N
32552003	Glues and adhesives	â	2 553	N	N

See footnotes at end of table.

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

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

NAICS		19	97	1992		
material code	Material consumed	Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)	
336322	OTHER MOTOR VEHICLE ELECTRICAL & ELECTRONIC EQUIPMENT MFG—Con.					
32220015 33632200	Paper and paperboard containers	X	18 188	N	N	
001900B7	starters, etc. Resistors, capacitors, transformers, electron tubes, semiconductors, and	X	591 923	N	N	
	other electronic components	X	302 191	Ŋ	Ņ	
00999826 00970099 00971000	Core parts purchased for use in remanufacturing or rebuilding All other materials and components, parts, containers, and supplies	X X X	33 529 1 016 967 1 753 266	X X	N N 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:

- 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.
- Cost of products bought and sold in the same condition.

- 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

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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 companyoperated 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 companyowned 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.

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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

336322 OTHER MOTOR VEHICLE ELECTRICAL AND ELECTRONIC EQUIPMENT MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing and/or rebuilding electrical and electronic equipment for motor vehicles and internal combustion engines.

The data published with NAICS code 336322 include the following SIC industries:

3679 Electronic components, n.e.c. (pt) 3694 Engine electrical equipment 3714 Motor vehicle parts and accessories (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 336322 include establishments primarily engaged in the manufacture of electronic control modular chips for motor vehicles. 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:

 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" (nsk) 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.

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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.

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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 SICbased 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.

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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

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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, completecoverage 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.

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Appendix D. Geographic Notes

Not applicable for this report.

1997 ECONOMIC CENSUS APPENDIX D D-1

Appendix E. Metropolitan Areas

Not applicable for this report.

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

Part 1. Products Statistics (Tables 6a and 6b)

NAICS product code		Footnote
@336322C	For additional detail, see Current Industrial Motors and Generators.	Reports MA334Q, Semiconductors and Electronic Components and MA335H,

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
3361110 pt	37110 pt	37110 pt	336211W pt	37110 pt	37110 pt	3363121	37142 pt	
3361110 pt	37111 pt	37111 pt	336211W pt	37130	37130	3363121101 3363121224	3714201 3714218	3714201 3714218
3361110 pt	37114 pt	37114 pt				3363121351 3363121354	3714231 3714232	
3361110100 pt 3361110100 pt	3711100 pt	3711100 pt 3711111 pt	336211W pt	37140 pt	37140 pt 3711000 pt	3363121457	3714234	3714234
3361110100 pt	3711151	3711151	336211WYWW pt 336211WYWW pt	3713000	3713000	3363121467 3363121504	3714237 3714206	3714237 3714206
3361110100 pt 3361110100 pt	3711403	3711400 pt 3711400 pt	336211WYWY pt	3711002 pt	3711002 pt	3363121507	3714207	3714207
3361110YWW	3711000 pt		336211WYWY pt	3713002	3713002 3714002 pt	3363121511 3363121514	3714208 3714209	3714208 3714209
	37110 pt		,	·	·	3363121517	3714215	3714215
	37114 pt		3362121	37151 3715100		3363121521 3363121527	3714216 3714217	
3361120 pt						3363121531	3714222	3714222
3361120100 pt	3711405	3711400 pt	3362123	37152 3715200	37152 3715200	3363121534 3363121537	3714224 3714225	3714224 3714225
3361120100 pt 3361120100 pt	3711600	3711600	226242W	37150	37150	3363121541 3363121544	3714226 3714227	
3361120YWW	3711000 pt 3711002 pt	3711000 pt	336212W	3715000	3715000	3363121571	3714241	3714241
	37114 pt		336212WYWY	3715002	3715002	3363121574 3363121YWV	3714249	
			3362130	37160	37160	3363123	3714A pt	·
	37115 pt		3362130101 3362130104	3716005	3716001 3716005	3363123101 3363123104	3714A02	3714A02
	3711407	3711400 pt	3362130107 3362130111	3716007 3716021	3716007	3363123107	3714A23	3714A23
3361201100 pt 3361201100 pt			3362130YWW	3716000	3716000	3363123111	3714A25	
3361201100 pt	3711500 pt	3711800	3362130YWY	3716002	3716002	3363123121 3363123YWV	3714A00 pt	3714A00 pt
3361202 pt	37114 pt	37114 pt	3362141	37921	37921	336312W	37140 pt	
3361202 pt	37119		3362141101 3362141104	3792114	3792114	336312WYWW 336312WYWY	3714000 pt 3714002 pt	
3361202100 pt 3361202100 pt	3711400 pt	3711400 pt	3362141207 3362141311	3792116 3792118	3792116 3792118	3363210	36470	36470
3361202100 pt	3711900	3711900	3362141413	3792125	3792125	3363210100 3363210YWW	3647000 pt 3647000 pt	3647000 pt
3361203 3361203101	37113 3711304	37113 3711304	3362141516 3362141YWV	3792128 3792100		3363210YWY	3647002	3647002
3361203104	3711303	3711303	3362143			3363221	36941	
	3711300	3711300	3362143101	3799611	3799601 pt	3363221101 3363221104	3694101 3694102	
336120W	37110 pt	37110 pt 3711000 pt	3362143105 3362143108	3799613 3799615	3799602 pt 3799604 pt	3363221201	3694103 3694104	3694103
336120WYWY	3711002 pt		3362143111 3362143114	3799617 3799619	3799607 pt	3363221204 3363221YWV	3694100	
3362111 pt	37111 pt	37111 pt	3362143117 pt	3799651 pt	3799601 pt	3363223	36942	36942
3362111 pt	37131	37131	3362143117 pt 3362143117 pt			3363223101 3363223104	3694201 3694202	3694202
3362111 pt	37149 pt	37149 pt	3362143117 pt 3362143117 pt		3799607 pt 3799609 pt	3363223201 3363223204	3694203 3694204	3694203 3694204
3362111101 3362111204	3713101 3713102		3362143YWV	3799600	3799600	3363223YWV	3694200	3694200
3362111307	3713112	3713112	3362145	37922	37922	3363225	36943	36943
3362111411 3362111413	3713116	3713116	3362145101 3362145204	3792242 3792244	3792242 3792244	3363225101 3363225104	3694301	3694302
3362111416 3362111519	3713117 3713121	3713117 3713121	3362145207	3792247	3792247	3363225201 3363225YWV	3694303 3694300	
3362111522	3713131	3713131	3362145311 pt 3362145311 pt	3792268 pt	3792263	3363227	36944	36944
3362111525 3362111528	3713132 3713135	3713132 3713135	3362145311 pt 3362145YWV	3792268 pt		3363227100	3694400	
3362111531	3713139	3713139		37920		3363229 3363229101	36947 3694701	36947 3694701
3362111534 3362111537	3713143	3713143 3713153	·			3363229201	3694711	3694711
3362111541	3713155	3713155	336214W pt 336214WYWW pt		37990 pt 3792000	3363229301 3363229304	3694702 3694704	3694702 3694704
3362111543 3362111546	3713162	3713161 3713162	336214WYWW pt 336214WYWY pt	3799000 pt	3799000 pt	3363229307 3363229309	3694705	3694705
3362111549	3713163 3711171	3713163		3792002 3799002 pt	3799002 pt	3363229309 3363229YWV	3694719	3694719 3694700
3362111555	3711181	3711111 pt	3363111	35921	35921	336322A	36949	36949
	3714925		3363111101	3592101	3592101	336322A101 336322A204	3694901 3694907	3694901 3694907
3362111571 pt 3362111571 pt	3713171 3714924	3713171 3714941 pt	3363111103 3363111105	3592102 3592103	3592102 3592103	336322A307 336322A409	3694911	3694911
3362111YWV pt 3362111YWV pt	3711100 pt	3711100 pt	3363111207 3363111YWV	3592105 3592100	3592105 3592100	336322A512	3694912	3694912 3694913
3362111YWV pt	3714900 pt				35922	336322A615 336322AYWV	3694919 3694900	3694919 3694900
3362113 pt	37114 pt	37114 pt	3363113101	3592201	3592201	336322C pt	36799 pt	
3362113 pt	37132	37132	3363113103 3363113205	3592203	3592203	336322C pt	37149 pt	·
3362113101 3362113219	3713201	3713201 3713225	3363113207 3363113209	3592204	3592204 3592205	336322C pt	3714A pt	3714A pt
3362113304	3713211	3713211	3363113211	3592206	3592206	336322C102	3714913	3714913
3362113307 3362113311	3713213	3713213 3713215	3363113313 3363113YWV	3592209 3592200	3592209 3592200	336322C104 336322C107	3714914 3714915	3714941 pt 3714941 pt
3362113313 3362113316	3713217 3713218	3713217 3713218			35923	336322C111 pt	3714921 pt	3714917
3362113322	3713226	3713226	3363115 3363115101	3592301	3592301	336322C114	3714942	3714904 pt
3362113325 3362113328	3713227 3713241	3713227 3713239 pt	3363115103 3363115YWV	3592302	3592302	336322C117 336322C119	3714944 3679926	3714904 pt 3679920 pt
3362113331 pt	3711411	3711400 pt	336311W		35920	336322C121 336322C122	3714945	3714941 pt
	3711400 pt	3711400 pt	336311WYWW	3592000	3592000	336322C124	3714A05	3714A41 pt
3362113YWV pt	3713200	3713200	336311WYWY	3592002	3592002	336322C127	3714A40	3714A41 pt

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
	3679900 pt	3679900 pt 3714900 pt 3714A00 pt	3363503YWV 336350W 336350WYWW 336350WYWY	37140 pt 3714000 pt 3714002 pt	37140 pt 3714000 pt 3714002 pt	3364117 3364117101 3364117104 3364117107 3364117111 3364117YWV	3721813 3721815 3721853	3721813 3721815 3721853 3721855
336322W pt 336322W pt 336322WYWW pt		37140 pt	3363601 3363601100 3363602	2396200	23990 pt	336411W	37210	37210 3721000
336322WYWW pt 336322WYWW pt 336322WYWY pt 336322WYWY pt	3694000	3694000 3714000 pt 3679002 pt	3363602100 3363603 3363603101	25312 pt	25312 pt 2531213	3364121 3364121100	37241 3724100 37242	3724100
336322WYWY pt	3714002 pt	3714002 pt	3363603104 3363603YWV 336360W pt	2531200 pt	2531215 2531200 pt 23960 pt	3364123 3364123000 3364125	3724200	3724200
3363301 pt	37149 pt	37149 pt 3714905 3714906 3714907 3714920	336360W pt 336360W pt 336360W yww pt	23990 pt	23990 pt 25310 pt 2396000 pt	3364125101 3364125104 3364125107 3364125111	3724321 3724323 3724331	3724321 3724323 3724331 3724333
3363301511 3363301514 3363301521 3363301524 3363301526	3714908	3714941 pt 3714941 pt 3714941 pt 3714228	336360WYWW pt 336360WYWW pt 336360WYWY pt 336360WYWY pt 336360WYWY pt	2399000 pt	2399000 pt 2531000 pt 2396002 pt 2399002 pt 2531002 pt	3364127 3364127101 3364127204 3364127307 3364127411	3724402	3724401 3724402 3724405
3363301528 3363301531 3363301YWV pt 3363303	3714911	3714941 pt 3714200 pt 3714900 pt	3363700 3363700100 3363700YWW 3363700YWY			3364127YWV 336412W 336412WYWW 336412WYWY	3724400 37240 3724000	3724400 37240 3724000
3363303101 3363303104 3363303121	3714A06	3714A06 3714A39 3714A41 pt 3714A00 pt	3363917 3363917010 3363917020 3363917030 3363917YWV	3585705	3585100 pt 3585100 pt 3585100 pt 3585100 pt	3364131	3728231 3728251 3728261	3728210 3728231 3728251 3728261
336330WYWW 336330WYWY 3363401 pt	3714000 pt 3714002 pt 32922	3714000 pt 3714002 pt 32922	336391B 336391B000 336391W 336391WYWW		35854 pt 3585400 pt 35850 pt 3585000 pt	3364131YWV 3364133 3364133101 33641331WV	3728200	3728200 37283 3728313
3363401 pt	3714801 3714802 3714807 3714809 3714811 3714813 3714817 3714803	37149 pt 3714801 3714802 3714807 3714807 3714809 3714811 3714813 3714817 3714803	336391WYWY 3363991 3363991101 3363991104 3363991107 3363991111 3363991111 3363991119 33639911YWV	37144	37144 3714401 3714402 3714404 3714405 3714407 3714408 3714409	3364135. 3364135101 3364135104 3364135207 3364135211 3364135211 3364135416 33641354VVV	37285	3728300 37285 3728513 3728515 3728594 3728599 3728598 3728599 3728500
3363401722 3363401737 3363401741 3363401744 3363401745	3714823 3714823 3714825 3714912	3714821 3714823 3714825 3714912	3363993 3363993101 3363993104 3363993107 3363993YWV	37145 3714501 3714502	37145 3714501 3714502	336413W	37611	3728000 pt 3728002 pt 37611
3363401747 pt 3363401747 pt 3363401747 pt 3363401747 pt 3363401747 pt 3363401747 pt 3363401747 pt	3292200 pt	3292200 pt	3363995 3363995101 3363995104 3363995107 3363995111 3363995YWV	37147	37147 3714701 3714705 3714707 3714714	3364143 3364143100 3364145 3364145100	37613	37613 3761300 37616 3761600
	3714A09	3714900 pt 3714A pt 3714A09	3363997 pt	·	·		3761201 3761202 3761200	3761201 3761202 3761200
3363403104 3363403107 3363403111 3363403114 3363403117 3363403121	3714A11	3714A11 3714A33 3714A35 3714A37	3363997 pt	3714A pt	3714A pt 3714901 3714902	3364149 3364149101 3364149104 3364149YWV	37614	3761400
3363403YWV 336340W pt 336340W pt	3714A00 pt	3714A00 pt 32920 pt	3363997401 3363997405 3363997409 3363997514 3363997524	3714235	3714235 3714236 3519987 3714909	336414A101 336414A104 336414AYWV 336414W	3761702	3761702 3761703 3761700
336340WYWW pt 336340WYWW pt 336340WYWY pt	3292000 pt	3714000 pt 3292002 pt	3363997527 3363997531 3363997534	3714922 3714923 3714931	3714922 3714923 3714931	336414WYWW 336414WYWY 3364151	3761000 3761002 37645	3761000 3761002 37645
3363501 3363501101 3363501104 3363501207 3363501211	37146	37146 3714603 3714605 3714613 3714615	3363997551	3714A52	3714A41 pt 3519900 pt 3714200 pt 3714900 pt	3364151101 3364151204 3364151307 3364151YWV	3764511	3764513 3764515 3764500
3363501313 3363501316 3363501434 3363501519 3363501522	3714623	3714623 3714625 3714641 3714628	3363997YWV pt 336399W pt	35190 pt	35190 pt 37140 pt	3364153101 3364153104 3364153107 3364153YWV	3764611	3764611 3764613 3764615
3363501525 3363501528 3363501531 3363501537 3363501541	3714633	3714633 3714635 3714637 3714643 3714649	336399WYWW pt 336399WYWW pt 336399WYWY pt 3364111	3714000 pt 3519002 pt 3714002 pt 37211	3714000 pt 3519002 pt 3714002 pt 37211	3364155 3364155101 3364155104 3364155107 3364155107 3364155YWV	37647	37647 3764711 3764713 3764715 3764700
3363501YWV 3363503 3363503101 3363503104	3714A pt	3714A04	3364111100 3364113 3364113000	37215 3721500	37215 3721500	3364157 3364157101 3364157104 3364157107 3364157YWV	37648	3764813 3764815
3363503107 3363503111 3363503114	3714A29	3714A29 3714A31 3714A41 pt	3364115 3364115101 3364115104 3364115YWV	3721711 3721751	3721711 3721751	336415W	37640	37640 3764000

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
			t					
3364191	37692	37692	3366115		37313	3366127119		
	3769211	3769211	3366115101	3731315		3366127YWV	3732700	3732700
3364191104	3769213	3769213	3366115107	3731335	3731335	336612W	37320 pt	37320 pt
3364191207	3769219	3769219 3769225	3366115111 3366115113	3731343 3731348	3731343 3731348	336612WYWW	3732000 pt	3732000 pt
3364191311 3364191413	3769225 3769235	3769225 3769235	3366115116	3731346	3731346	336612WYWY	3732002 pt	
3364191YWV	3769200		3366115119	3731321	3731321		•	
33041911707	3709200	3709200	3366115121		3731321	3369911 pt	37511	37511
2264402	27004	27004	3366115123	3731333	3731333	3369911 pt	39443 pt	39443 pt
3364193 3364193101	3760444	37694 3769414	3366115124 pt	3731361 pt		3369911101 pt	3751148 pt	
	3769419		3366115124 pt	3731361 pt		3369911101 pt	3751148 pt	
3364193107	3769425	3769425	3366115124 pt	3731361 pt		3369911101 pt	3751148 pt	
3364193111	3769435	3769435	3366115YWV	3731300	3731300	3369911101 pt	3751148 pt	3751145
3364193YWV	3769400	3769400				3369911101 pt	3751148 pt	3751147
			3366117			3369911101 pt	3751148 pt	3751149
336419W	37690	37690	3366117101			3369911101 pt	3751148 pt	3751155
	3769000		3366117104	3731449		3369911104 pt	3751109	
	3769002	3769002	3366117YWV	3731400	3731400	3369911104 pt 3369911109		
			2266110	27240	27246	2203311103	3/3/1/10	3/3/110
3365101	37431 pt	37431 pt	3366119	37316		3369911113	3751112	3751112
3365101101	3743102	3743101 pt	3366119101 3366119104	3731601 3731602		3369911116	3751115	3751115
3365101104	3743104	3743101 pt	3366119YWV	3731600		3369911119	3751116	
3365101107	3743105	3743101 pt	33001131000	3/3/000	3731000	3369911122 pt	3751124 pt	3751113
3365101111	3743113	3743103 pt	336611W	37310	37310	3369911122 pt	3751124 pt	3751114
3365101YWV	3743100 pt	3743100 pt	336611WYWW	3731000	3731000	3369911122 pt	3751124 pt	
	·		336611WYWY	3731002	3731002	3369911YWV pt	3751100	3751100
3365103	37432	37432				3369911YWV pt	3944300 pt	3944300 pt
3365103100 pt	3743200 pt	3743200	3366121	37322	37322	3369913	37512	37512
	3743200 pt	3743211	3366121101	3732201	3732201	3369913100 pt	3751200 pt	
3365103100 pt	3743200 pt	3743215	3366121104	3732202	3732202	3369913100 pt	3751200 pt	3751201
3365103100 pt	3743200 pt	3743235	3366121107	3732211	3732211	3369913100 pt	3751200 pt	3751209
3365103100 pt	3743200 pt	3743241	3366121111	3732207	3732207	336991W pt	37510	27510
3365103100 pt	3743200 pt	3743265	3366121113	3732209	3732219 pt	33099 I W pt	3/310	37510
			3366121116 3366121119	3732210	3732219 pt 3732219 pt	336991W pt	39440 pt	39440 pt
3365105 pt	3531X pt	3531M pt	3366121222	3732220 3732221	3/32219 pt	336991WYWW pt	3751000	3751000
·	·	•	3366121225	3732223	3732223	336991WYWW pt	3944000 pt	3944000 pt
3365105 pt	3531X pt	3531P pt	3366121228	3732225	3732225	336991WYWY pt	3751002	3751002
			3300121220	3732223	3732223	336991WYWY pt	3944002 pt	3944002 pt
3365105 pt	37433	37433		0700007	070007	3369920 pt	37110 pt	37110 nt
3365105301	3743301	3743301	3366121231					·
3365105304	3743305	3743305	3366121234 3366121239	3732226 3732222	3732229 pt 3732229 pt	3369920 pt	37114 pt	37114 pt
3365105405	3531X21	3531P21	3366121243	3732224	3732229 pt	3369920 pt	37950	37950
3365105407	3743304	3743304	3366121246	3732231	3732229 pt	3369920111		
3365105411	3743311	3743311	3366121337	3732228	3732228 pt	3369920214	3795051	3795051
3365105413	3743312	3743312	3366121337 3366121YWV	3732200	3732200	3369920216	3711401	3711400 pt
3365105416	3743314	3743314	0000121111111111111	0.02200	0.02200	3369920217	3795098	3795098
3365105419 pt	3531X80	3531M21 pt	3366123			3369920YWW pt	3711000 pt	
3365105419 pt	3743319	3743319	3366123104	3732311	3732311	3369920YWW pt	3711400 pt	3711400 pt
3365105YWV pt 3365105YWV pt	3531X00 pt	3531M00 pt 3531P00 pt	3366123107	3732316	3732316	3369920YWW pt	3795000	3795000
33651051WV pt	3531X00 pt	3743300	3366123201	3732304	3732304	3369920YWY pt	3711002 pt	3711002 pt
3365105YWV pt	3743300	3143300	3366123211	3732321	3732321	3369920YWY pt	3795002	3795002
000540141 :	05040 1	05040 -4	3366123YWV	3732300	3732300	3369991	37993	37993
336510W pt	35310 pt	35310 pt	2222425	07004	07004	3369991101		
			3366125	37324	37324	3369991104	3799384	3799384
336510W pt	37430 pt	37430 pt	3366125107 3366125201			3369991104 3369991YWV	3799300	3799300
336510WYWW pt	3531000 pt		3366125204			1		
			3366125211	3732405	3732403 3732409 pt	3369993		
336510WYWY pt	3531002 pt	3531002 pt	3366125213 pt	3732408 pt	3732409 pt	3369993101	3799903	
336510WYWY pt	3143002 pt	3143002 pt	3366125213 pt	3732408 pt	3732409 pt	3369993204 3369993307	3799904	3799904
0000444	07044	07044	3366125YWV	3732400	3732400	3369993414	3799905	3799905 3799923 pt
3366111	37311					3369993417	3799916	
3366111101	3731111	3731111	3366127	37327	37327	3369993421	3799920	3799923 pt
3366111104	3731107	3731107	3366127101	3732702	3732702	3369993513	3799925	
JJ00111110/	3731119 3731100	3731119	3366127104	3732704	3732704	3369993YWV	3799900 pt	3799900 pt
22004441//////		3/31100	3366127107	3732706	3732706		5. 55555 pt	5. 00000 pt
3366111107 3366111YWV	3/31100		3300127107	3/32/00	0.02.00			
			3366127111	3732708	3732708	336999W	37990 pt	37990 pt
3366111YWV 3366113 3366113100	37312	37312	3366127111 3366127113 3366127116	3732708 3732712	3732708 3732712	336999WYWW	37990 pt 3799000 pt 3799002 pt	3799000 pt