Beet Sugar Manufacturing

1997

Issued September 1999

EC97M-3113C

1997 Economic Census *Manufacturing* Industry Series



Helping You Make Informed Decisions

U.S. Department of Commerce Economics and Statistics Administration U.S. CENSUS BUREAU



ACKNOWLEDGMENTS

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

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

Mendel D. Gayle, Chief, Forms, Publications, and Customer Services Branch, assisted by Julius Smith Jr. and Baruti Taylor, Section Chiefs, performed overall coordination of the publication process. Kim Credito, Patrick Duck, Chip Murph, Wanda Sledd, and Veronica White provided primary staff assistance.

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

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

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

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

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

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

Beet Sugar Manufacturing

1997

Issued September 1999

EC97M-3113C

1997 Economic Census

Manufacturing Industry Series





U.S. Department of Commerce William M. Daley, Secretary

> Robert L. Mallett, Deputy Secretary

Economics and Statistics Administration Robert J. Shapiro, Under Secretary for Economic Affairs

U.S. CENSUS BUREAU Kenneth Prewitt, Director



Economics and Statistics Administration

Robert J. Shapiro, Under Secretary for Economic Affairs



U.S. CENSUS BUREAU Kenneth Prewitt, Director

William G. Barron, Deputy Director

Paula J. Schneider, Principal Associate Director for Programs

Frederick T. Knickerbocker, Associate Director for Economic Programs

Thomas L. Mesenbourg, Assistant Director for Economic Programs

William G. Bostic Jr., Chief, Manufacturing and Construction Division

CONTENTS

	oduction to the Economic Census	1 5
TAE	BLES	
1. 2. 3. 4. 5. 6a. 6b. 7.	Industry Statistics on NAICS Basis With Distribution Among 1987 SIC-Based Industries: 1997 Industry Statistics for Selected States: 1997 Detailed Statistics by Industry: 1997 Industry Statistics by Employment Size: 1997 Industry Statistics by Industry and Primary Product Class Specialization: 1997 Products Statistics: 1997 and 1992 Product Class Shipments for Selected States: 1997 and 1992 . Materials Consumed by Kind: 1997 and 1992	7 7 8 9 10 11
APF	PENDIXES	
A. B. C. E. F. G.	Explanation of Terms NAICS Codes, Titles, and Descriptions Coverage and Methodology Geographic Notes Metropolitan Areas Footnotes for Products Statistics and Materials Consumed by Kind Comparability of Product Classes and Product Codes: 1997 to 1992	A-1 B-1 C-1 G-1

-- Not applicable for this report.

Introduction to the Economic Census

PURPOSES AND USES OF THE ECONOMIC CENSUS

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

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

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

ALL-NEW INDUSTRY CLASSIFICATIONS

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

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

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

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

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

RELATIONSHIP TO SIC

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

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

GEOGRAPHIC AREA CODING

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

1997 ECONOMIC CENSUS

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

BASIS OF REPORTING

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

DOLLAR VALUES

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

All dollar values are shown in thousands of dollars.

AVAILABILITY OF ADDITIONAL DATA

Reports in Print and Electronic Media

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

Special Tabulations

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

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

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

HISTORICAL INFORMATION

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

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

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

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

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

SOURCES FOR MORE INFORMATION

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

ABBREVIATIONS AND SYMBOLS

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

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

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

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 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 or SIC code	Industry	All		All employees		Production workers					Total capita	
		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)	expendi- tures (\$1,000)
311313 206300	Beet sugar mfg Beet sugar		36 36	7 718 7 718	252 236 252 236	6 684 6 684	14 333 14 333	203 040 203 040	968 482 968 482	1 768 320 1 768 320	2 732 503 2 732 503	167 511 167 511

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

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 establishments		All employees		Production 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)
311313, BEET SUGAR MFG												
United States	-	36	36	7 718	252 236	6 684	14 333	203 040	968 482	1 768 320	2 732 503	167 511

* 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 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
311313, BEET SUGAR MFG		311313, BEET SUGAR MFG-Con.	
Companies ¹ number	8	Value added\$1,000	968 482
All establishments	36 _ 6 30	Materials and supplies inventories, beginning of year \$1,000	752 062 383 245 134 312 234 505
All employees number. Total compensation ² \$1,000. Annual payroll \$1,000. Total fringe benefits \$1,000.	7 718 310 977 252 236 58 741	Total inventories, end of year \$1,000. Finished goods inventories, end of year \$1,000. Work-in-process inventories, end of year \$1,000. Materials and supplies inventories, end of year \$1,000.	784 765 431 559 90 297 262 909
Production workers, average for year	6 684 5 885 6 068 5 424	Gross book value of total assets at beginning of year\$1,000 Total capital expenditures (new and used)\$1,000 Capital expenditures for buildings and other structures (new and used)\$1,000 Capital expenditures for machinery and equipment (new	1 156 046 167 511 26 554
Production workers on November 12number Production-worker hours1,000 Production-worker wages\$1,000.	9 359 14 333 203 040	and used)	140 957 8 848 1 314 709
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 fuels \$1,000. Cost of fuels \$1,000. Cost of fuels \$1,000. Cost of purchased electricity \$1,000. Cost of contract work \$1,000.	1 768 320 1 561 961 43 231 118 473 26 608 18 047	Cost of purchased services for the repair of buildings and other	53 635 5 306 571 4 735
Quantity of electricity purchased for heat and power	700 954 369 826	structures ³	1 711 65 27 483
Total value of shipments \$1,000. Primary products value of shipments \$1,000. Secondary products value of shipments \$1,000. Total miscellaneous receipts \$1,000. Value of resales \$1,000. Contract receipts \$1,000. Other miscellaneous receipts \$1,000. Secondary from the state of the s	59 500	Response coverage ratio ⁴ percent. Cost of purchased communications services ³ \$1,000. Response coverage ratio ⁴ percent. Cost of purchased legal services ³ \$1,000. Response coverage ratio ⁴ percent. Cost of purchased accounting and bookkeeping services ³ \$1,000.	27 483 65 1 594 65 617 65 1 374 65 408
Primary products specialization ratio	2 616 327	Response coverage ratio ⁴ percent	408 65 1 562 65
Coverage ratio percent	99	services ³ \$1,000 Response coverage ratio ⁴ percent	2 773 65

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control. ²These items are collected in the ASM and estimated for the remaining establishments; therefore, the levels of estimation are higher than for other items in the table. ³Based on ASM sample data. ⁴A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

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

Table 4. Industry Statistics by Employment Size: 1997

			All shments	All em	ployees	Pr	oduction work	ers				
Employment size class	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)
311313, BEET SUGAR MFG												
All establishments	-	36	36	7 718	252 236	6 684	14 333	203 040	968 482	1 768 320	2 732 503	167 511
Establishments with 1 to 4 employees Establishments with 5 to 9	_	-	-	-	-	-	-	-	-	-	-	-
employees Establishments with 10 to 19	-	-	-	-	-	-	-	-	-	-	-	-
employees Establishments with 20 to 49	-	-	-	-	-	-	-	-	-	-	-	-
employees Establishments with 50 to 99	-	2	2	D	D	D	D	D	D	D	D	D
employees Establishments with 100 to 249	-	4	4	D	D	D	D	D	D	D	D	D
employees Establishments with 250 to 499	2	17	17	3 009	92 161	2 632	5 472	75 909	278 545	627 996	908 240	65 299
employees Establishments with 500 to 999	-	12	12	3 867	132 624	3 327	7 223	105 164	588 818	940 761	1 506 653	95 357
employees Establishments with 1,000 to 2,499	-	1	1	D	D	D	D	D	D	D	D	D
employees Establishments with 2,500 employees	-	-	-	-	-	-	-	-	-	-	-	-
or more	-	-	-	-	-	-					-	-
Administrative records ²	-	-	-	-	-	-		-			-	

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

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

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

NAICS industry or	Industry or primary product class	All	All employees		Production workers			Value added		Mahar at	Total capital
product class code		estab- lish- ments	Number	Payroll (\$1,000)	Number	Hours (1,000)	Wages (\$1,000)	by manufacture (\$1,000)		Value of shipments (\$1,000)	expendi- tures (\$1,000)
311313	Beet sugar mfg	36	7 718	252 236	6 684	14 333	203 040	968 482	1 768 320	2 732 503	167 511

Products Statistics: 1997 and 1992 Table 6a.

[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]

			19	997			19	992	
NAICS		Number of		Product	shipments	Number of		Product	shipments
product code	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)
311313	Beet sugar	N	х	x	2 619 463	N	x	х	2 189 723
3113130	Refined beet sugar and byproducts	N	х	x	2 619 463	N	х	x	2 189 723
31131301	Refined granulated beet sugar, including cube and tablet sugar, shipped in individual services (small paper								
3113130111	packets) Refined granulated beet sugar, including cube and tablet sugar, shipped in individual services (small	N 2	x	x D	D	N 2	×	X	N
	paper packets)1,000 s tons	2	~	D		2	х	IN	IN
31131302	Refined granulated beet sugar, including cube and tablet sugar, shipped in consumer units (cartons and sacks of 25 lb or less)	N	x	x	374 119	N	x	x	N
3113130221	Refined granulated beet sugar, including cube and tablet sugar, shipped in consumer units (cartons and sacks of 25 lb or less)	5	x	635.0	374 119	9	x	N	N
31131303	Refined granulated beet sugar, including cube and tablet sugar, shipped in commercial units (bags and other								
3113130331	containers more than 25 lb) Refined granulated beet sugar, including cube and tablet sugar, shipped in commercial units (bags and	N	х	X	516 195	N	x	x	Ν
	other containers more than 25 lb)1,000 s tons	6	х	890.1	516 195	10	х	948.2	422 292
31131304	Refined granulated beet sugar, including cube and tablet sugar, shipped in bulk (rail cars, trucks, or bins)	N	х	x	1 233 844	N	x	х	N
3113130441	Refined granulated beet sugar, including cube and tablet sugar, shipped in bulk (rail cars, trucks, or bins)	7	x	P2 143.6	1 233 844	9	x	1 825.4	944 231
31131305	Refined confectioners' powdered beet sugar and refined soft or brown beet								
3113130551	sugar Refined confectioners' powdered beet	N	x	X	90 910	N	х	Х	N
3113130561	sugar	6 6	X X	102.7 39.6	64 227 26 683	9 7	X X	131.3 35.9	76 490 24 891
31131306 3113130671	Refined liquid beet sugar or sugar syrup Refined liquid beet sugar or sugar syrup	N 3	x x	X D	D	N	x x	X	N
31131307	Whole, straighthouse or discard beet		X				X		
3113130781	sugar molasses and molasses beet sugar pulp, bulk. Whole, straighthouse or discard beet	N	х	x	77 592	N	х	х	N
3113130791	Sugar molasses	6 5	X X	P608.5 S	50 683 26 909	9 7	x x	942.2 524.6	63 107 44 373
31131308 31131308A1	Molasses beet sugar pulp, pelletized Molasses beet sugar pulp, pelletized1,000 s tons	N 4	X X	X S	42 985 42 985	N 9	x x	X 1 161.5	N 118 718
31131309	All other beet sugar pulp, including raw beet sugar, dried and other beet pulp								
31131309B1	(plain) All other beet sugar pulp, including raw beet sugar, dried and other beet pulp	N	X	x	74 173	N	x	X	N
	(plain)	4	х	S	74 173	6	х	P208.3	14 760
3113130Y 3113130YWW	Beet sugar, nsk, total Beet sugar, nsk, for nonadministrative-	N	X	x	10 815	N	x	x	N
3113130YWY	record establishments Beet sugar, nsk, for administrative- record establishments	N N	x x	x x	10 815	N N	x x	x x	4 893

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

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

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

[Not applicable for this report]

Table 7. Materials Consumed by Kind: 1997 and 1992

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

NAICS		19	97	1992		
material code	Material consumed	Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)	
311313	BEET SUGAR MFG					
11199100 32221001 001900A1 001900A3 32222401 00970099 00971000	Sugar beets 1,000 s tons. Paperboard containers, boxes, and corrugated paperboard 1,000 s tons. Packaging paper and plastics flink, coated and laminated. Bags; plastics, foil, and coated paper Bags; uncoated paper and multiwall	Х	1 312 943 7 184 7 911 3 465 10 615 219 843 -	27 617.7 X X X X X X X X	1 188 071 7 560 7 222 D 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-ofyear and end-of-year inventories at cost or market. Effective with the 1982 Economic Census, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). Beginning in 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Inventory Data by Stage of Fabrication

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

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

COST OF MATERIALS

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

Included in this item are:

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

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

Specific Materials Consumed

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

Duplication in Cost of Materials and Value of Shipment

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

1997 ECONOMIC CENSUS

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 linesupervisor 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 sixdigit 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

1997 ECONOMIC CENSUS

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
	NAICS COUE	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 repro- ducing
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 sixdigit 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 beginningand end-of-year inventories.

For those industries where value of production is collected instead of value of shipments, value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

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

VALUE OF SHIPMENTS

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

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

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

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

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

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

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

Duplication in Cost of Materials and Value of Shipment

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

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

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry. Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the U.S. level and beginning in 1964, for all geographic levels.

Specialization and Coverage Ratios

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

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

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

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

Appendix B. NAICS Codes, Titles, and Descriptions

311313 BEET SUGAR MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing refined beet sugar from sugarbeets The data published with NAICS code 311313 include the following SIC industry:

2063 Beet sugar

Appendix C. Coverage and Methodology

MAIL/NONMAIL UNIVERSE

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

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

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

Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these establishments but were included in the product and material "not specified by kind" (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 fourdigit SIC industry and then erroneously re-coded to a six-digit NAICS industry. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

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

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

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

2. Establishments sent a report form.

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

a. ASM sample establishments.

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

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

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

The report form also contained a materialsconsumed 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 supplybased or production-oriented concepts in defining industries. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees.

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 1997, there are 21 subsectors (three-digit NAICS), 86 industry groups (four-digit NAICS), 184 NAICS industries (five-digit NAICS) that are comparable with Canadian and Mexican classification, and 473 U.S. industries (six-digit NAICS). This represents an expansion of the four-digit 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.

MANUFACTURING

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

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

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

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

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

Smaller establishments in the remaining portion of the mail stratum were sampled with probabilities ranging from .02 to 1.00. The initial probabilities of selection assigned to these establishments were proportionate to a measure-of-size determined for each establishment. The measure-of-size was a function of the establishment's 1992 industry classification, its 1992 product class data, and the historical variability of the year-to-year estimates of the product class estimates. For each product class (1,755) and four-digit industry (459), a desired reliability constraint was specified. Using a technique developed by Dr. James R. Chromy of the Research Triangle Institute, the initial establishment probabilities were optimized such that the expected sample satisfied all industry and product class reliability constraints while the sample size was minimized. This technique reduces the likelihood of selecting nonrepresentative samples for individual product classes or industries.

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

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

DESCRIPTION OF THE ASM ESTIMATING PROCEDURE

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

Due to the positive year-to-year correlation, estimates derived using this methodology are generally more reliable than comparable estimates developed from the current sample data alone. Estimates for the capital expenditures variables are not generated using the difference estimator because the year-to-year correlations are considerably weaker. The standard linear estimator is used for these variables.

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

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

QUALIFICATIONS OF THE ASM DATA

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

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

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

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, 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 broaderbased annual survey of manufactures and the economic

MANUFACTURING

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

DUPLICATION IN COST OF MATERIALS AND VALUE OF SHIPMENTS

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

VALUE OF INDUSTRY SHIPMENTS COMPARED WITH VALUE OF PRODUCT SHIPMENTS

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

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas

Not applicable for this report.

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

Not applicable for this report.

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

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
311111121 311111231 3111111341	2047321 2047323 2047326 2047338	2047321 2047323 2047326 2047338	3112111681 3112111791 31121117A1	2041121 2041123 2041126 2041129	2041121 2041123 2041126 2041129	3112217 3112217111 3112217121 3112217121 3112217131 3112217141	20463 2046353 2046354 2046356 2046359	2046353 2046354 2046356 2046356 2046359
311111114 3111114 3111114111 3111114221 3111114231 3111114341	2047441 2047443 2047445 2047454	20474 2047441 2047443 2047445	31121118C1 31121118D1 31121118E1 31121118F1	2041128 2041131 2041151 2041151 2041161 2041198 2041100	2041131 2041151 2041161 2041198	3112217YWV 311221A 311221A111 311221A221 311221A221 311221A241 311221A241 311221AYWV	2046300 20464 2046462 2046465 2046472 2046475	20464 2046462 2046465 2046472 2046475
3111114351 3111114YWV 311111W 311111WYWW 311111WYWY	2047400 20470 2047000	20470	3112117	2041213 2041219 2041200 20413	2041213 2041219 2041200 20413	311221W 311221WYWW 311221WYWY	2046400 20460 2046000 2046002	2046400 20460 2046000 2046002
2111101121	2048111	2048111	3112117111 3112117121 3112117131 3112117131 3112117141 3112117151 3112117161	2041315 2041321 2041323 2041365	2041315 2041321 2041323 2041365	3112221 3112221111 3112221221 3112221231 3112221241 3112221241	20751 2075113 2075115 2075121 2075121 2075131 2075100	2075113 2075115 2075121 2075131
3111191231 3111191231 3111191341 3111191351 3111191361 3111191371 3111191371 3111191381 3111191381 3111191381	2040101	2048121 2048122 2048123 2048124 2048131 2048131 2048132	3112117171 3112117181 3112117YWV 3112117YWV	2041395 2041397 2041300	2041395 2041397 2041300 20415	3112224 3112224111 3112224221 3112224231 3112224241	20752 pt 2075211 2075231 2075251 2075261	2075211 2075231 2075251 2075261
31111913B1 31111913C1	2048133 2048134 2048100 20482	2048133 2048134 2048100 20482	311211A121 311211A131 311211A131 311211A141 311211A151 pt 311211A151 pt	2041513 2041515 2041521 2041530 pt 2041530 pt 2041530 pt	2041513 2041515 2041521 2041521 2041517 2041519	3112224261 3112224YWV 311222W 311222W 311222WYWW 311222WYWY	2075297 2075200 pt 20750 pt 207500 pt 2075002 pt	20750 pt 2075000 pt
3111197 3111197111 3111197121 3111197YWV 311119A		20483 2048301 2048302 2048300 20484	311211A161 pt 311211A161 pt	2041590 pt 2041590 pt 2041590 pt 2041590 pt	2041581 2041585 2041586 2041588	3112234 3112234100	20741 2074100 20742 2074200	2074100 20742 2074200
	2048400 20485 2048503	2048400 20485	311211A171 pt 311211A171 pt	2041596 pt 2041596 pt 2041596 pt 2041500	2041591 2041592 2041595	3112237 3112237100 311223A 311223A111 311223A221	2074451	2074300 20744 pt 2074414 2074451
311119G 311119G100 311119J 311119J	20486 2048600 20487 20487	20486 2048600 20487 2048705	311211D pt 311211D111 pt 311211D111 pt 311211D121 311211D121 311211DYWV pt 311211DYWV pt	2034338	2034339 pt 2041613	311223A231 311223AYWV 311223D 311223D 311223D111 311223D121 311223DYWV 311223DYWV	2074400 pt 20761 2076113	2074400 pt 20761 2076113 2076133
311119M 311119M111 311119M121	2048700 20488 2048811 2048812	2048700 20488 2048811 2048812	311211W pt 311211W pt 311211W yt	20340 pt 20410 2034000 pt	20340 pt 20410 2034000 pt	311223G 311223G 311223G111 311223G121 311223G131 311223G141 311223G141	2076100 20762 2076223 2076252 2076257 2076262	20762 2076223 2076252 2076257
311119M131 311119M141 311119M151 311119M161 311119M161 311119M161	2048816 2048821 2048823 2048825 2048831	2048813 2048816 2048821 2048823 2048823 2048825 2048831	311211WYWW pt 311211WYWY pt 311211WYWY pt 3112120 3112120 3112120111 3112120221	2034002 pt 2041002 20440 2044011	2034002 pt 2041002 20440 2044011	311223G151 311223G161 311223G171 311223G181 311223G191 311223GYWV	2076263 2076264 2076265 2076265 2076268 2076273 2076200	2076263 2076264 2076265 2076268 2076273
311119P121		2048922	3112120331 3112120441 3112120451 3112120461 3112120461	2044017 2044021 2044035	2044017 2044021 2044035 2044051 2044098	311223J 311223J111 311223J121 311223J131 311223J141	20763 pt 2076311 2076351 2076361 2076397	20763 pt 2076311 2076351 2076361 2076397
311119P141 311119P151	2048939 2048943 2048900 pt 2048A	2048939 2048941 pt 2048900 pt 2048A	3112120YWW	2044000 2044002 20830 2083000 pt	2044000	311223JYWV 311223W pt 311223W pt 311223WYWW pt 311223WYWW pt	2076300 pt 20740 pt 20760 pt 207600 pt 2076000 pt	20740 pt 20760 pt 2074000 pt
311119T121 311119T131 311119T141 311119T141 311119T151 311119T161 311119T161	2048A03 2048A05 2048A07 2048A09 2048A11	2048A03 2048A05 2048A07 2048A09 2048A11	31122130YWY 31122130YWY 31122111 3112211121 3112211121	2083002 20461 2046103 2046104	2083002 20461 2046103 2046104	311223WYWY pt 311223WYWY pt 3112251 pt 3112251 pt	2074002 pt 2076002 pt 2076002 pt 20744 pt	2074002 pt 2076002 pt 20744 pt
311119T181 311119TYWV 311119W 311119W 311119WYWW 311119WYWW 311119WYWY	2048A19 2048A00 20480 pt 2048000 pt	2048A19 2048A00 20480 pt 2048000 pt	3112211131 pt 3112211131 pt 3112211141 3112211251 3112211261 3112211261 3112211201	2046114 pt 2046118 2046123 2046125 2046129	2046116 2046118 2046123 2046125 2046129	3112251 pt 3112251 pt 3112251 pt 3112251 pt 3112251111	20763 pt 20773 pt 20791 2079113	20773 pt 20791
3112111 3112111111 3112111221 3112111331 3112111341	20411 2041105 2041107 2041107 2041111 2041113	20411 2041105 2041107 2041111 2041113	3112214 3112214111 3112214221 3112214331 pt 3112214331 pt	20462 2046211 2046213 2046218 pt 2046218 pt	20462 2046211 2046213 2046215 2046217	3112251221 3112251331 3112251441 3112251551 3112251561 3112251571	2079115 2079142 2079151 2079152 2079153 2079153 2079154	2079115 2079142 2079151 2079152 2079153 2079154
3112111357	2041115	2041113	1 31 1 ZZ 14T WV	2046200	2040200	3112251581	20/9159	2019129

MANUFACTURING-INDUSTRY SERIES

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3112251591 31122515A1 31122515A1 31122515D1 31122515D1 31122517D1 31122517D1 3112251706 3112251716 3112251710 3112251710 3112251721 3112251721 3112251731 3112251741	2079183	2079183 2079185 2079198 2077311 pt 2074499 2075299 2075299 2076391 2076394 2076395	3113207 3113207111 3113207221 3113207231 3113207251 3113207251 3113207360 3113207371 3113207381 3113207391 3113207YWV	20669 2066921 206691 2066975 2066975 2066963 2066981 2066992 2066993 2066993 2066993 2066990	2066963 2066981 2066992 2066993 2066995	3114121 3114121111 3114121221 3114121331 3114121341 3114121451 3114121451 3114121671 3114121781 3114121791 3114121791	2038211 2038213 2038215 2038219 2038221 2038221 2038223 2038240 2038240 2038228	20382 2038211 2038213 2038215 2038219 2038221 2038223 2038240 2038228 2038231 2038231 2038235
3112251751 3112251YWV pt 3112254 3112254	2076398 2075200 pt 2075200 pt 2076300 pt 2077300 pt 2079100 20792	2076398 2074400 pt 2075200 pt 2076300 pt 2077300 pt 2079100 20792 2079200	311320W 311320WYWW 311320WYWY 3113301 3113301 3113302 3113302 3113302000	2066002 20642 2064200 54410 pt	2066002 20642 2064200 54410 pt	31141217B1 31141217C1 31141217C1 31141217E1 31141217F1 pt 31141217F1 pt 31141217F1 pt 31141217F1 pt 31141217FV	2038238 2038239 2038247 2038250 pt 2038250 pt 2038250 pt 2038250 pt 2038250 pt	2038237 2038238 2038239 2038247 2038243 2038245 2038249 2038249 2038200
311225W pt 311225W pt 311225W pt 311225W pt 311225WYWW pt	20750 pt 20760 pt 20770 pt	20750 pt 20760 pt 20770 pt 20790 2074000 pt	311330W pt 311330W pt 311330WYWW pt 311330WYWW pt 311330WYWY pt 311330WYWY pt 311330WYWY pt	5441000 pt 2064002 pt 5441002 pt 20643	54410 pt 2064000 pt 5441000 pt 2064002 pt 5441000 pt 20643	3114124 3114124111 311412421 3114124331 3114124441 31141244WV 311412WYWW 311412WYWW 311412WYWY	2038451 2038459 2038463	20384 2038459 2038459 2038463 2038469 2038400 203800 203800 2038000 2038002
311225WYWW pt 311225WYWW pt 311225WYWY pt 311225WYWY pt 311225WYWY pt 311225WYWY pt 311225WYWY pt 311225WYWY pt 3112301	2076000 pt 2077000 pt 2074002 pt 2075002 pt 2076002 pt 2077002 pt 2077002 pt 2079002	2077000 pt 2079000 pt 2074002 pt 2075002 pt 2076002 pt 2077002 pt 2079002 20431	3113401000 3113402 3113402000 3113404 3113404110 3113404320 3113404530 3113404530 3113404YWV	54410 pt 5441015 20648 2064811 2064814	54410 pt 5441000 pt 20648 2064811 2064814 2064815	3114211 3114211111 3114211121 3114211131 3114211131 3114211151 3114211161 3114211161 3114211171 3114211181 3114211171 3114211171 3114211171 3114211171 3114211171	2033112 2033113 2033115 2033122 2033124 2033128 2033128 2033132 2033134	2033113 2033115 2033122 2033124 2033128 2033132 2033134
3112301111 3112301121 3112301231 3112301231 3112301351 3112301351 3112301361 3112301471 3112301481 3112301591 3112301541 3112301591 3112301591 3112301591	2043103 2043105 2043107 2043109 2043110 2043113 2043113 2043116 2043118 2043119 	2043103 2043105 2043107 2043109 2043111 2043113 2043116 2043118 2043119	3113407 pt 3113407 pt 3113407221 3113407231 3113407241 3113407YWV pt 3113407YWV pt 311340W pt	20649 2099G pt 2064976 2064921 2064920 2099G00 pt 20640 pt	20649 2099G pt 2064976 2099G98 pt 2064921 2064900 2099G00 pt 20640 pt	31142111A1 31142111B1 31142111C1 31142111C1 31142111E1 31142111E1 31142111E1 31142111E1 31142111H1 3114211YWV	2033138 2033141 2033157 2033159 2033161 2033163	2033138 2033141 2033157 2033159 2033161 2033163 2033165 2033169 2033169 2033100
3112304 3112304111 3112304131 3112304131 3112304131 3112304141 3112304141 31123047WV 311230W 311230W	2043201 2043203 2043205 2043207 2043207 2043200 pt 2043200 pt 20430 pt 204300 pt	2043201 2043203 2043205 2043207 2043207 2043200 pt 2043200 pt 20430 pt 2043000 pt	311340W pt 311340WYWW pt 311340WYWW pt 311340WYWW pt 311340WYWW pt 311340WYWY pt 311340WYWY pt 311340WYWY pt	54410 pt 2064000 pt 2099000 pt 5441000 pt 2064002 pt 2099002 pt 5441002 pt	54410 pt 2064000 pt 2099000 pt 5441000 pt 2064002 pt 2099002 pt 5441000 pt	3114214 3114214111 3114214121 3114214131 3114214131 3114214141 3114214161 3114214161 3114214171 3114214191 3114214191	2033203 2033205 2033215 2033235 2033237 2033239 2033253 2033255 2033255 2033255	20332 2033203 2033205 2033215 2033235 2033237 2033239 2033253 2033255 2033255 2033274
3113110 3113110111 3113110221 3113110231	2061011	20610 2061011 2061065 2061085 2061000 2061002 20620 2062009	3114111 311411111 3114111121 3114111121 3114111131 3114111141 3114111151 3114111371 3114111371 311411141 311411141 311411141 311411141 311411141 31141115A 31141115A	2037141 2037155 2037157	2037141 2037155 2037157 2037161 2037162 2037165 2037165 2037166	31142141A1 31142141B1 31142141D1 31142141D1 31142141E1 31142141F1 31142141F1 31142141F1 31142141H1 3114214YWV	2033276 2033291 2033293 2033294 2033295	2033275 2033276 2033291 2033293 2033294 2033294 2033297 2033297 2033298 2033200
3113120221 3113120331 3113120441 3113120551 3113120561 3113120561 3113120581 3113120581 3113120581 3113120581 3113120581 31131207WW. 31131207WW.	2062015 2062031 2062035 2062045 2062045 2062053 2062053 2062056 2062075 2062075		31141116B1 31141116C1 31141116E1 31141116E1 31141116E1 31141116H1 31141116H1 31141116L1	2037170 2037172 2037174 2037180 2037183 2037185 2037185 2037186 2037187 2037194 2037194	2037170 2037172 2037180 2037180 2037185 2037185 2037186 2037186 2037187 2037194 2037194	3114217 3114217111 3114217121 3114217YWV 311421A 311421A 311421A.111 311421A121 311421D	2033315 2033321 2033300 20335 2033515 2033598 2033598 2033500 20336	20333 2033315 2033321 2033300 20335 2033515 2033598 2033598 2033500 20336
3113130 3113130111 3113130221 3113130331 3113130441 3113130551 3113130561 3113130671 pt 3113130781 3113130781 31131308A1	20630	20630 2063012 2063012 2063013 2063033 2063033 2063035 2063055 2063055 2063076 2063082 2063084	3114111YWV 3114114 3114114121 3114114121 3114114121 3114114151 3114114151 3114114161 3114114171 3114114171 3114114191 3114114201	2037100 20372 2037211 2037213 2037225 2037225 2037231 2037235 2037241 2037244 2037245	2037100 20372 2037211 2037221 2037225 2037225 2037231 2037233 2037235 2037235 2037241 2037241	311421D111 311421D221 311421D231 311421D241 311421D251 311421D251 311421D261 311421D261 311421D281 311421D281 311421D281 311421D281 311421D281 311421D281 311421D3A1 311421D3C1 311421D3C1 311421DYWV	2033632 2033614 2033615 2033622 2033623 2033651 2033655 2033667 2033667 2033667 2033658 2033658	20336631 pt 2033614 2033615 2033622 2033653 2033655 2033655 2033667 2033631 pt 2033631 pt 2033631 pt 2033631 pt 2033631 pt
31131309B1 3113130YWW 3113130YWY 3113130YWY 3113201 3113201 311320121 3113201221 3113201231 3113201241 3113201241 3113201241 3113201241 3113201241 3113201241 311320141 3113204 3113204	2063091 2063000 2063002 20661 2066122 2066112 2066132 2066132 206610 2066100 20662	2063091 2063000 2063002 2066122 2066122 2066112 2066132 2066152 2066100 20662	31141143B1 31141144C1 31141145D1 31141145E1 31141146G1 31141146G1 31141146G1 31141140H1 311411WYWV 311411WYWY 311411WYWY	2037248 2037249 2037253 2037255 2037261 2037263 2037269 2037269 2037200 203700 203700 203700	2037253 2037255 2037261 2037263 2037269 2037200 20370 20370 20370	311421G 311421G111 311421G121 311421G131 311421G141 311421G151 311421G151 311421G171 311421G191 311421G1A1 311421G1A1 311421GYWV	2033811 2033812 2033813 2033821 2033825 2033825 2033828 2033823	20338 2033811 2033812 2033813 pt 2033821 2033825 2033831 2033831 2033841 2033851 2033861 2033861

G-2 APPENDIX G

MANUFACTURING-INDUSTRY SERIES

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
	2033A31 2033A41	2033A11 2033A31 2033A41	3115117 3115117111 3115117121 3115117131 3115117YWV	2026313 2026316 2026318 2026300	2026316 2026318	3115200 3115200111 3115200221 3115200331 3115200441 3115200451	2024014 2024015 2024016 2024021	20240 2024014 2024015 2024016 2024021 2024022
311421J261 311421J271 311421J27V 311421JYWV 311421M 311421M	2033A93 2033A94 2033A00 2033B	2033A93 2033A94 2033A00 2033B	311511A 311511A111 311511A121 311511AYWV 311511D	20265 2026502 2026504 2026500 20267	2026500 pt 2026500 pt	3115200461 3115200471 3115200481 3115200491 31152005A1	2024023 2024025 2024026 2024027	2024023 2024099 pt 2024099 pt 2024099 pt
311421M121 311421M131 311421MYWV 311421P 311421P 311421P111	2033B19 2033B21 2033B00 20352 2035211	2033B19 2033B21 2033B00 20352 2035211	311511D111 311511D121 311511D131 311511D141 311511D151 311511D151	2026711 2026713 2026714	2026711 2026713 2026714 2026716 2026717	31152005B1 31152005C1 31152005D1 31152005E1 31152005F1 31152005G1	2024094 2024096 2024052 2024054	
311421P121 311421P131 311421P141 311421P151 311421P151	2035213 2035215 2035219 2035221 2035231 2035233	2035213 2035215 2035219 2035221 2035221 2035231	311511DYWV 311511G 311511G 311511G111 311511G121 311511G131	2026700 20268 2026813 2026815	2026700 20268 2026813 2026815	31152005H1 3115200YWW 3115200YWY 3116111	2024098 2024000 2024002	2024099 pt 2024000 2024002 20111
311421P181 311421P191	2035235 2035239 2035271 2035275 2035298	2035235 2035239 2035271 2035275	311511GYWV 311511W 311511WYWW	2026800	2026800 20260 2026000	3116111221 3116111331 3116111441 3116111551 3116111661	2011114 2011116 2011118 2011118 2011131 2011151 2011171	2011114 2011116 2011118 2011131 2011151
311421W pt 311421W pt 311421WYWW pt 311421WYWW pt 311421WYWW pt	20330 20350 pt 2033000 2035000 pt	20330 20350 pt 2033000 2035000 pt 2033002	3115120 3115120111 3115120121 3115120131 3115120YWW 3115120YWY	2021013	2021013 2021015 2021021 2021000	3116111YWV 3116114 3116114111 3116114121 3116114121	2011100 20112 2011212 2011217 2011261	2011100 20112 2011212 2011217 2011217 2011261
311421WYWY pt 3114221 3114221100 3114224	2035002 pt 20321 2032100 20322	2035002 pt 20321 2032100 20322	3115131 3115131111 3115131121 3115131121 3115131131 3115131141	2022303 2022304 2022305 2022306	2022301 pt 2022302 pt 2022301 pt 2022302 pt	3116114YWV 3116117 3116117111 3116117121 3116117YWV	20113	20113 2011312 2011352
3114224100 3114227 3114227111 3114227121 3114227131 3114227141	2032370 2032371 2032375	20323	3115131YWV 3115134 3115134111 3115134221 3115134231 3115134241	20224 2022411 2022413 2022423	20224 2022411 2022413 2022423	311611A111 311611A121 311611A131 311611AYWV	20114 2011412 2011417 2011451 2011400	2011412 2011417 2011451 2011400
3114227151 3114227161 3114227171 3114227181 3114227191 311422719WV	2032379 2032382 2032384 2032386	2032379 2032382 2032384 2032386 2032391 2032390	3115134251 3115134YWV 3115137 3115137111	2022429 2022400 20225 2022511	2022429 2022400 20225 2022511	311611G	2011513 2011517 2011500	2011517 2011500 20116
311422A 311422A111 pt 311422A111 pt 311422A121 311422A121	20324 pt 2032464 pt 2032464 pt 2032491 2032493	20324 pt 2032463 2032494 2032491 2032493	311513W	20226 2022600 20220	2022500 20220 pt 2022000 pt 20220 pt	311611G121 311611G131 311611G141 311611G141 311611G151 311611G161 311611G171	2011622 2011631 2011635 2011641 2011652	2011622 2011631
311422A141 pt 311422A141 pt 311422A141 pt 311422A141 pt	2032471 2032498 pt 2032498 pt 2032498 pt 2032498 pt 2032400 pt	2032468 2032496 2032497 2032499 pt	311513WYWY 3115141 3115141111 3115141221	2022000 2022002 20235 2023511 2023522	2022000 pt 2022002 20235 2023511 2023522	311611GYWV 311611J 311611J111 311611J121 311611J121	2011600 20117 2011711 2011717 2011721	2011600 20117 2011711 2011717 2011717 2011721
311422W 311422WYWW		20320 pt 2032000 pt	3115141681	2023542 2023543 2023545 2023546 2023548	2023542 2023543 2023545 2023547 pt 2023547 pt	311611J141 311611J151 311611JYWV	2011735 2011791 2011700 20118	2011735 2011791 2011700
3114231 pt 3114231111 3114231121 3114231YWV		2099B pt 2034200 2099B19 pt 2099B00 pt 20343 pt	3115141791 31151418A1 3115141YWV 3115144 3115144	2023551 2023500 20236 2023612	2023612	311611P 311611P111 311611P121 311611P131 311611P141 311611P144	2011914 2011922 2011951 2011997	2011914 2011922 2011951 2011997
3114234 3114234111 3114234121 3114234131 3114234141 3114234151	2034313 2034315 2034321 2034325 2034332	2034313 2034315 2034321 2034325 2034322	3115144121 3115144131 3115144241 3115144351 3115144YWV	2023621 2023626 2023628 2023600	2023621 2023626 2023628 2023600	311611T pt 311611T pt 311611T111 311611T111	20489 pt 2011B15 2011B17	2011B 20489 pt 2011B15 2011B17
3114234161 3114234181 3114234YWV 311423W pt 311423W pt	2034340 2034300 pt 20340 pt	20340 pt	3115147121 3115147131 3115147YWV	2023712 2023717 2023719 2023700	2023712 2023717 2023719 2023700	311611T131 311611T141 311611T151 311611T151 311611T161 311611T171 311611TYWV pt	2011B45 2011B55 2011B59 2048940 2011B00	2011B45 2011B55 2011B59 2048941 pt 2011B00
311423WYWW pt 311423WYWW pt 311423WYWY pt	2034000 pt 2099000 pt 2034002 pt 2099002 pt	2034000 pt 2099000 pt 2034002 pt	311514A121 311514A131 311514A241 311514A251	2023801 2023803 2023804 2023805 2023807	2023801 2023803 2023819 pt 2023805 2023807	311611W pt 311611WYWW pt	20110	20110 20480 pt 2011000
3115111111 3115111221 3115111231 3115111241 3115111241	2026112 2026115 2026116 2026119 2026100	2026112 2026115 2026116 2026119	311514A261 311514A271 311514AYWV 311514D	2023813 2023821 2023800 20239 2023921	2023813 2023819 pt 2023800 20239 2023921	311611WYWY pt 311611WYWY pt	2011002 2048002 pt 20136	2011002 2048002 pt
3115114 3115114111 3115114221 3115114231 3115114441 3115114441	2026212 2026223 2026225 2026232 2026232	20262 2026212 2026223 2026225 2026232 2026232 2026243	311514D121 311514D131 311514D141 311514D151 311514D161 311514DYWV	2023923 2023925 2023928 2023932 2023938	2023923 2023925 2023928 2023932 2023938	3116121111 3116121121 3116121231 3116121341 3116121451 3116121561	2013612 2013622 2013631 2013635 2013641	2013612 2013622 2013631 2013635 2013641
3115114461 3115114471 3115114481 3115114YWV	2026245 2026252 2026263	2026245 2026252 2026263	311514W 311514WYWW		20230 2023000	3116121671 3116121781 3116121YWV pt	2013661	2013661 2013741 2013600

MANUFACTURING-INDUSTRY SERIES

APPENDIX G G-3

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3116124 3116124111	20137 pt 2013711	20137 pt 2013711		2091002		3118124 3118124111	20512	20512 2051230
3116124221 3116124331	2013717 2013721	2013717	3117121 3117121111	20922 2092201	20922 2092213 pt	3118124121 3118124231	2051231 2051243	2051231 2051243
3116124441 3116124451	2013735 2013791	2013735	3117121131	2092202 2092203	2092213 pt	3118124241 3118124251	2051244 2051250	2051244 2051250
3116124YWV	2013700 pt	2013700 pt	3117121141	2092204 2092207	2092213 pt 2092213 pt	3118124261 3118124271	2051251 2051260	2051251 2051260
3116127 3116127100	20138	20138 2013800	3117121161 3117121171	2092208	2092213 pt	3118124281 3118124291	2051261 2051270	2051260 2051261 2051270
311612A pt			3117121181 3117121191	2092210	2092213 pt	3118124291	2051270	2051270
311612A pt 311612A111	51470 pt	51470 pt 5147000 pt	31171211A1	2092212	2092213 pt	31181242B1 31181242C1	2051280	2051280 2051281
311612A221 311612A331	2013B11	2013B11	31171211B1 31171211C1	2092215 2092217	2092215 2092217	31181242D1	2051290	2051290
311612A441 311612A451	2013B17	2013B17	31171211D1 31171211E1	2092218 2092219	2092219	31181242F1 3118124YWV	2051249 2051200	2051249 2051200
311612A461 311612AYWV pt	2013B21	2013B21	31171211F1 31171211G1	2092223 2092224	2092224	3118127	20514	20514
311612AYWV pt	5147000 pt	5147000 pt	31171211H1 31171211J1	2092225 2092226	2092225 2092226	3118127111 3118127121	2051415	2051413 2051415
311612W pt			31171211K1 31171211L1	2092227 2092228	2092227 2092228	3118127131 3118127YWV	2051419 2051400	2051419 2051400
311612W pt 311612WYWW pt	2013000	51470 pt 2013000	31171211M1 3117121YWV	2092231 2092200	2092231 2092200	311812A 311812A111	20515 2051513	20515 2051513
311612WYWW pt 311612WYWY pt	2013002	2013002	3117122	20923 2092311	20923 2092311	311812A121 311812AYWV	2051519	2051519 2051500
311612WYWY pt 3116131	20771	5147002 20771	3117122221 3117122331	2092313 2092315	2092313 2092315		20518 pt	20513
3116131111 3116131121	2077111 2077113	2077111	3117122441	2092317 2092319	2092317	311812D pt		20516
3116131YWV	2077100	2077100	3117122461 3117122471	2092321 2092323	2092321 2092323	311812D pt 311812D111	20518 pt 2051813	20517 2051313
3116134 pt			3117122581 3117122691	2092325 2092328	2092326 pt 2092327 pt	311812D131 311812D151	2051845 2051850	2051700 2051600
3116134 pt 3116134111	2077211	20773 pt 2077211	31171226A1	2092331	2092329 pt	311812D181 311812D191	2051890 2051892	2051398 pt 2051398 pt
3116134221 3116134231	2077237	2077237	31171227B1 31171228C1	2092332 2092333	2092326 pt 2092327 pt	311812DYWV	2051800	2051300
3116134241 3116134251	2077346	2077346	31171228D1 31171229E1	2092334	2092329 pt 2092326 pt	· ·	20510	20510
3116134261 3116134YWV pt	2077200	2077311 pt 2077200	3117122AF1 3117122AG1	2092338	2092327 pt 2092329 pt	311812W pt 311812WYWW pt	2051000	20520 pt 2051000
3116134YWV pt 311613W	2077300 pt	2077300 pt 20770 pt	3117122YWV	2092300	2092300	311812WYWW pt 311812WYWY pt	2051002	2052000 pt 2051002
311613WYWW 311613WYWY	2077000 pt	2077000 pt	3117123	20925 2092521	20925 2092521	311812WYWY pt 3118130	2052002 pt 20530	2052002 pt 20530
3116151	20151	20151	3117123121	2092523	2092523	3118130111 3118130221	2053014 2053011	2053014 2053011
3116151111 3116151221	2015134	2015134	3117123141	2092525	2092525	3118130331 3118130341	2053020 2053017	2053020 2053017
3116151331 3116151441	2015139	2015139	3117123261 3117123271 3117123281	2092526 2092527	2092526 2092527 2002528	3118130351 3118130361	2053040 2053030	2053040 2053025 pt
3116151551 3116151YWV	2015141 2015100	2015141 2015100	3117123281 3117123291 31171232A1	2092528 2092529 2092530	2092528 2092529 2092530	3118130371	2053032 2053055	2053025 pt 2053050 pt
3116154 3116154111	20152	20152 2015221	31171232B1		2092533	31181303V1 3118130YWW	2053060 2053000	2053050 pt 2053000
3116154121 3116154YWV	2015223	2015223 2015200	31171232C1 31171232D1	2092534		3118130YWY	2053002	2053002
3116157	20153	20153	31171232E1 3117123YWV	2092536	2092536	3118211 3118211111	2052125	20521 pt 2052125
3116157111 3116157221	2015324	2015324	3117124 pt	20773 pt	20773 pt	3118211331	2052135	2052123
3116157331 3116157341	2015326 2015327	2015327	3117124 pt	20926	20926	3118211341 3118211351	2052159	2052151 pt
3116157YWV 311615A			3117124111	2092613	2092611 2092613	3118211YWV	2052197 2052100 pt	2052100 pt
311615A111	2015414	2015414	3117124211	2092698 2077363	2077361 pt	3118214111	20522	20522 2052213
311615A121 311615AYWV	2015416 2015400	2015416 2015400	3117124221	2077367	2077366 pt 2077379 pt	3118214221 3118214331	2052217 2052215	2052217 2052215
311615D 311615D111 pt	20155 2015512 pt	20155 2015511	3117124311 3117124YWV pt 3117124YWV pt	2077314 2077300 pt 2092600	2077311 pt 2077300 pt	3118214341 3118214351	2052216	2052216 2052218
311615D111 pt 311615D111 pt	2015512 pt	2015513 2015515	311712W pt		2092600 20770 pt	3118214361	2052221	2052220 2052221
311615D121 311615D131	2015531	2015531 2015532	311712W pt	20920	20920	3118214381 3118214391 3118214YWV	2052235	2052235 2052231
311615D141 311615D151	2015534	2015534	311712WYWW pt 311712WYWW pt	2077000 pt 2092000	2077000 pt 2092000			2052200 20520 pt
311615D161 311615D171 311615DYWV	2015539 2015548	2015539 2015548	311712WYWY pt 311712WYWY pt	2077002 pt 2092002	2077002 pt 2092002	311821W 311821WYWW 311821WYWY	205200 pt 2052000 pt 2052002 pt	2052000 pt 2052002 pt
311615DYWV	2015500 20150 pt		3118110	54610	54610	3118220	20450	20450
311615WYWW 311615WYWY	2015000 pt	2015000 pt	3118110111	5461011 5461013	5461000 pt 5461000 pt	3118220121 3118220211	2045013 2045011	2045011
3117110 pt			3118110131	5461015 5461017	5461000 pt 5461000 pt	3118220231 3118220241 pt	2045030 pt	2045017
3117110 pt	20773 pt	20773 pt	3118110151 3118110161 31181101V1	5461019 5461021	5461000 pt 5461000 pt	3118220241 pt 3118220241 pt	2045030 pt 2045030 pt	2045025
3117110 pt 3117110111	20910		3118110YWW 3118110YWY	5461090 5461000 5461002	5461000 pt 5461000 pt 5461000 pt	3118220251 3118220261 pt	2045090 pt	2045081
3117110221 3117110331	2091013	2091013	3118121 pt		5461000 pt 20511	3118220261 pt 3118220261 pt	2045090 pt 2045090 pt	2045085 2045086
3117110341 3117110351	2091015	2091015	3118121 pt	20521 pt	20521 pt	3118220261 pt 3118220261 pt	2045090 pt 2045090 pt	2045088 2045089
3117110461 3117110471	2077362	2077361 pt	3118121111 3118121121	2051121 2051122	2051121 2051122	3118220271 pt 3118220271 pt	2045096 pt	2045095 2045091 2045092
3117110481 3117110591	2077371	2077379 pt	3118121231 3118121241	2051127 2051129	2051127 2051129	3118220271 pt 3118220271 pt 3118220YWW	2045096 pt	2045092 2045095 2045000
31171106A1	2091031	2091031	3118121351	2051131 2051133	2051131 2051133	3118220YWY	2045002	2045002
31171107B1 31171107C1	2091051 2091071		3118121471	2051135 2051137	2051135 2051137	3118230 3118230111	20980 2098001	20980 2098001
31171107D1 31171107E1	2091082 2091089	2091082 2091089	3118121491 31181214A1	2052188 2052189	2052198 pt 2052198 pt	3118230221 3118230331	2098007 2098003	2098002 pt 2098003
3117110YWW pt 3117110YWW pt	2077000 pt 2077300 pt	2077000 pt 2077300 pt	31181214G1 31181214J1	2051141 2051142	2051141 2051142	3118230341	2098004 2098005	2098004 2098005
3117110YWW pt 3117110YWY pt	2091000	2091000	3118121YWV pt 3118121YWV pt	2051100 2052100 pt	2051100 2052100 pt	3118230361 3118230YWW	2098006 2098000	2098006 2098000

G-4 APPENDIX G

MANUFACTURING-INDUSTRY SERIES

1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published	1997 published	1997 collected	1992 published
3118230YWY	2098002	2098002 pt	3119301	20872	20872	3119910 pt	20990 pt	20990 pt
3118300 pt	20990 pt	20990 pt	3119301111	2087215 2087221	2087215 2087221	3119910 pt 3119910111	20999 pt 2099921	20999 pt 2099921
3118300 pt 3118300100 3118300YWW pt 3118300YWW pt 3118300YWW pt	2099000 pt 2099900 pt 2099002 pt	2099000 pt 2099900 pt 2099002 pt	3119301YWV 3119304 3119304111 3119304121 3119304131 3119304141	20873 2087321 2087323 2087325	2087200 20873 2087321 2087323 2087325 2087341	3119910221 3119910331 3119910441 3119910551 3119910561 3119910671	2099931 2099935 2099945 2099953 2099955 2099958	2099931 2099935 2099945 2099953 2099955
3119111 3119111111 3119111121 3119111121 3119111131 3119111241	2068013 2068015 2068017	20680 pt 2068013 2068015 2068017 2068033	3119304151 3119304161 3119304YWV 3119307	2087343	2087343 2087345 2087300 20874 pt	3119910781 3119910YWW pt 3119910YWW pt 3119910YWY	2099959 2099000 pt 2099900 pt 2099002 pt	2099000 pt 2099900 pt
3119111251 3119111261 3119111371 3119111371 3119111381 3119111391 31191113A1 31191113A1 31191113A1	2068035 2068037 2068053 2068055 2068057 2068057 2068061	2068035 2068037 2068053 2068055 2068057 2068061 2068000 pt	3119307111 3119307121 3119307131 3119307141 3119307YWV 311930W 311930W	2087459 2087461 2087481 2087481 2087400 pt 20870 pt 2087000 pt	2087461 2087471 2087481	3119991 3119991111 3119991121 3119991131 3119991131 3119991141 3119991151 3119991YWV	20991	2099113 2099115 2099153 2099155 2099159
3119114121	2099F44	2099F46	311930WYWY 3119411 3119411111 3119411121	2087002 pt 20996 2099611 2099651	2087002 pt 20996 2099611 2099651	3119994 3119994111 3119994121 3119994YWV	20993 2099325 2099327 2099300	2099325 2099327 2099300
311911W pt 311911W pt 311911WYWW pt	20680 pt 20990 pt 2068000 pt	20680 pt 20990 pt 2068000 pt	3119411131 3119411YWV 3119414	2099600 20353	2099657 2099600 20353	3119997 3119997111 3119997121 3119997121	20994 2099413 2099423 2099434	2099413 2099423
311911WYWW pt 311911WYWY pt	2099000 pt	2099000 pt 2068002	3119414111 3119414221 3119414YWV	2035311 2035351 2035300	2035351 2035300	3119997141 3119997YWV 311999A	2099455 2099400 2099A	2099455 2099400 2099A
3119191 3119191100 3119194	20961 2096100 20962	2096100	3119417 3119417111 3119417221 3119417231	2035411 2035423 2035429	2035423 2035429	311999A111 311999A121 311999A131 311999A141	2099A01 2099A02 2099A03 2099A04	2099A02 2099A03 2099A04
3119194111 3119194221 3119194331 3119194YWV	2096219 2096225 2096229	2096221 pt 2096221 pt 2096229	3119417441 3119417YWV 311941W pt	2035400	2035400	311999A151 311999A161 311999AYWV	2099A05 2099A06 2099A00	2099A05 2099A06 2099A00
	20521 pt 20963		311941W pt 311941WYWW pt 311941WYWW pt 311941WYWW pt	20990 pt 2035000 pt 2099000 pt 2035002 pt	20990 pt 2035000 pt 2099000 pt 2035002 pt	311999D 311999D131 311999D141 311999D151 311999DYWV	2099B pt 2099B11 2099B13 2099B21	2099B11 2099B13 2099B19 pt
3119197111 3119197221 3119197YWV pt	2052155	2052151 pt 2096300 pt 2052100 pt	311941WYWY pt 3119421 pt	2099002 pt 2099E	2099002 pt 2099E	311999G 311999G111	2099B00 pt 20159 2015911	2099B00 pt 20159 2015911
	20520 pt	20520 pt	3119421 pt 3119421111 3119421121 3119421131	2899121 2099E31 2099E33	28991 pt 2899100 pt 2099E31 2099E33	311999G121 311999G131 311999G141 311999G151	2015913 2015915 2015917 2015951	2015915 2015917 2015951
311919WYWW pt 311919WYWW pt 311919WYWY pt	20960 2052000 pt 2096000 2052002 pt 2096002	2096000 2052002 pt	3119421241 3119421351 3119421YWV pt 3119421YWV pt	2099E39 2099E00	2099E38 2099E39 2099E00 2899100 pt	311999G161 311999G171 311999G181 311999GYWV	2015953 2015955 2015957 2015900	2015955 2015957
3119201	20951 2095111 2095115	20951	3119424 pt 3119424 pt 3119424111	20952 pt 2087111		311999J 311999J111 311999J121 311999JYWV	20874 pt 2087435 2087437 2087400 pt	2087435 2087437
	2095100		3119424121 3119424131 3119424141 3119424YWV pt	2087153	2087115 2087153 2095200 pt 2087100	311999M pt	20324 pt	2099G pt
3119204 pt	20432 pt 20952 pt 2095211	20952 pt	3119424YWV pt 3119427	2095200 pt 2099B pt	2095200 pt 2099B pt	311999M101 311999M111 311999M121 311999M131	2032495 2099G11 2099G25 2099G41	2099G11 2099G25
3119204121 3119204YWV pt 3119204YWV pt	2043211 2043200 pt 2095200 pt	2043209 pt 2043200 pt 2095200 pt	3119427111 3119427121 3119427131 3119427241 3119427251	2099B01 2099B03 2099B07 2099B05 2099B09	2099B01 2099B03 2099B07 2099B05 2099B09	311999M141 311999M151 311999M161	2099G51 2099G85 2099G91 2099G98	2099G51 2099G85
3119207221 3119207231	2099D82 2099D83 2099D86	2099D83 2099D86	3119427YWV 311942W pt	2099B00 pt	2099B00 pt	311999M171 311999MYWV pt 311999MYWV pt 311999W pt	2032400 pt 2099G00 pt 20150 pt	
3119207YWV	2099D00	2099D00	311942W pt	20950 pt	20950 pt	311999W pt	20320 pt	20320 pt
	20430 pt		311942W pt		20990 pt	311999W pt	20870 pt	
311920W pt 311920WYWW pt 311920WYWW pt 311920WYWW pt 311920WYWY pt 311920WYWY pt	2099000 pt	20990 pt 2043000 pt 2095000 pt 2099000 pt 2043002 pt 2095002 pt	311942W pt 311942WYWW pt 311942WYWW pt 311942WYWW pt 311942WYWW pt 311942WYWY pt 311942WYWY pt 311942WYWY pt 311942WYWY pt	2087000 pt 2095000 pt 2899000 pt 2899000 pt 2087002 pt 2095002 pt	2095000 pt 2099000 pt 2899000 pt 2087002 pt 2095002 pt 2099002 pt	311999W pt 311999WYWW pt 311999WYWW pt 311999WYWW pt 311999WYWW pt 311999WYWY pt 311999WYWY pt 311999WYWY pt	20990 pt 2015000 pt 2032000 pt 2087000 pt 2099000 pt 2015002 pt 2032002 pt 2087002 pt 2099002 pt	2015000 pt 2032000 pt 2087000 pt 2099000 pt 2015002 pt 2032002 pt 2087002 pt

1997 Beet Sugar Manufacturing 1997 Economic Census Manufacturing Industry Series