

Machine Tool (Metal Cutting Types) Manufacturing: 2002

Issued January 2005

EC02-311-333512 (RV)

2002 Economic Census

Manufacturing

Industry Series



USCENSUSBUREAU

Helping You Make Informed Decisions

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



ACKNOWLEDGMENTS

This report was prepared in the Manufacturing and Construction Division under the direction of **Judy M. Dodds**, Assistant Division Chief for Census and Related Programs who was responsible for the overall planning, management, and coordination. **Kenneth Hansen**, Chief, Investment Goods Industries Branch, assisted by **Chris Blackburn**, **Mike Brown**, and **Jazmin Rose**, Section Chiefs, and **Raphael Corrado**, **Tom Flood**, **Robert Miller**, and **Robert Rosati**, Special Assistants, performed the planning and implementation. **Stephanie Angel**, **Larry Blumberg**, **Paul Corey**, **Vance Davis**, **Kellie Friedrich**, **Vera Harris-Bourne**, **Jennifer Lee**, **Allison Marin**, **Keith McKenzie**, **Blynda Metcalf**, **Philippe Morris**, **Betty Pannell**, **Deanna Pickerall**, **Shaquella Rhea**, **Keeley Voor**, and **Tempie Whittington**, provided primary staff assistance. **Mendel D. Gayle**, Chief, Census and Related Programs Support Branch, assisted by **Kimberly DePhillip**, Section Chief, performed overall coordination of the publication process. **Patrick Duck**, **Michael Flaherty**, **Taylor C. Murph**, **Wanda Sledd**, and **Veronica White** provided primary staff assistance.

Mathematical and statistical techniques, as well as the coverage operations, were provided by **Paul Hsen**, Assistant Division Chief for Research and Methodology Programs, assisted by **Stacey Cole**, Chief, Manufacturing Methodology Branch, and **Robert Struble**, Section Chief. **Jeffrey Dalzell** and **Cathy Gregor** provided primary staff assistance.

Eddie J. Salyers, Assistant Division Chief of Economic Planning and Coordination Division, was responsible for overseeing the editing and tabulation procedures and the interactive analytical software. **Dennis Shoemaker** and **Kim Wortman**, Special Assistants, **John D. Ward**, Chief, Analytical Branch, and **Brandy L. Yarbrough**, Chief, Edit Branch, were responsible for developing the systems and procedures for data collection, editing, review, and correction. **Donna L. Hambric**, Chief of the Economic Planning Staff, was responsible for overseeing the systems and information for dissemination. **Douglas J. Miller**, Chief, Tables and Dissemination Branch, assisted by **Lisa Aispuro**, **Jamie Fleming**, **Keith Fuller**, **Andrew W. Hait**, and **Kathy G. Padgett** were responsible for developing the data dissemination systems and procedures.

The Geography Division staff, **Robert LaMacchia**, Chief, developed geographic coding procedures and associated computer programs.

The Economic Statistical Methods and Programming Division, **Howard R. Hogan**, Chief, developed and coordinated the computer processing systems. **Barry F. Sessamen**, Assistant Division Chief for Post Collection, was responsible for design and implementation of the processing system and computer programs. **Gary T. Sheridan**, Chief, Macro Analytical Branch, assisted by **Apparao V. Katikineni** and **Edward F. Johnson** provided computer programming and implementation.

The Systems Support Division provided the table composition system. **Robert Joseph Brown**, Table Image Processing System (TIPS) Senior Software Engineer, was responsible for the design and development of the TIPS, under the supervision of **Robert J. Bateman**, Assistant Division Chief, Information Systems.

The staff of the National Processing Center performed mailout preparation and receipt operations, clerical and analytical review activities, and data entry.

Margaret A. Smith, **Bernadette J. Beasley**, **Michael T. Browne**, and **Alan R. Plisch** of the Administrative and Customer Services Division, **Walter C. Odom**, Chief, provided publication and printing management, graphics design and composition, and editorial review for print and electronic media. General direction and production management were provided by **James R. Clark**, Assistant Division Chief, and **Susan L. Rappa**, Chief, Publications Services Branch.

Special acknowledgment is also due the many businesses whose cooperation contributed to the publication of these data.

Machine Tool (Metal Cutting Types) Manufacturing: 2002

Issued January 2005

EC02-311-333512 (RV)

2002 Economic Census

Manufacturing

Industry Series



U.S. Department of Commerce

Donald L. Evans,

Secretary

Theodore W. Kassinger,

Deputy Secretary

Economics and Statistics Administration

Kathleen B. Cooper,

Under Secretary for
Economic Affairs

U.S. CENSUS BUREAU

Charles Louis Kincannon,

Director



**Economics
and Statistics
Administration**

Kathleen B. Cooper,
Under Secretary
for Economic Affairs



U.S. CENSUS BUREAU

Charles Louis Kincannon,
Director

Hermann Habermann,
Deputy Director and
Chief Operating Officer

Vacant,
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

Introduction to the Economic Census	v
Manufacturing	ix
Tables	
1. Historical Statistics for the Industry: 2002 and Earlier Years ...	1
2. Industry Statistics for Selected States: 2002	2
3. Detailed Statistics by Industry: 2002	3
4. Industry Statistics by Employment Size: 2002.....	4
5. Industry Statistics by Primary Product Class Specialization: 2002	5
6a. Products Statistics: 2002 and 1997	6
6b. Product Class Shipments for Selected States: 2002 and 1997 .	8
7. Materials Consumed by Kind: 2002 and 1997.....	10
Appendixes	
A. Explanation of Terms	A-1
B. NAICS Codes, Titles, and Descriptions	B-1
C. Methodology.....	C-1
D. Geographic Notes	--
E. Metropolitan and Micropolitan Statistical Areas	--
F. Comparability of Product Classes and Product Codes: 2002 to 1997.....	F-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 to 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.

INDUSTRY CLASSIFICATIONS

Data from the 2002 Economic Census are published primarily according to the 2002 North American Industry Classification System (NAICS). NAICS was first adopted in the United States, Canada, and Mexico in 1997. The 2002 Economic Census covers 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 Food Services
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), largely covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 100 subsectors (three-digit codes), 317 industry groups (four-digit codes), and, as implemented in the United States, 1,179 industries (six-digit codes).

RELATIONSHIP TO HISTORICAL INDUSTRY CLASSIFICATIONS

Prior to the 1997 Economic Census, data were published according to the Standard Industrial Classification (SIC) system. 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 1997 Economic Census *Bridge Between NAICS and SIC* demonstrates the relationships between NAICS and SIC industries. Where changes are significant, it may not be possible to construct time series that include data for points both before and after 1997.

Most industry classifications remained unchanged between 1997 and 2002, but NAICS 2002 includes substantial revisions within the construction and wholesale trade sectors, and a number of revisions for the retail trade and information sectors. These changes are noted in industry definitions and will be demonstrated in the *Bridge Between NAICS 2002 and NAICS 1997*.

For 2002, data for enterprise support establishments (those functioning primarily to support the activities of their company's operating establishments, such as a warehouse or a research and development laboratory) are included in the industry that reflects their activities (such as warehousing). For 1997, such establishments were termed auxiliaries and were excluded from industry totals.

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. (For selected industries, only payroll, employment, and classification are collected for individual establishments, while other data are collected on a consolidated basis.)

GEOGRAPHIC AREA CODING

Accurate and complete information on the physical location of each establishment is required to tabulate the census data for states, metropolitan and micropolitan statistical areas, counties, and corporate municipalities (places) including cities, towns, townships, villages, and boroughs. Respondents were required to report their physical location (street address, municipality, county, and state) if it differed from their mailing address. For establishments not surveyed by mail (and those single-establishment companies that did not provide acceptable information on physical location), location information from administrative sources is used as a basis for coding.

AVAILABILITY OF ADDITIONAL DATA

All results of the 2002 Economic Census are available on the Census Bureau Internet site (www.census.gov) and on digital versatile discs (DVD-ROMs) for sale by the Census Bureau. The American FactFinder system at the Internet site allows selective retrieval and downloading of the data. For more information, including a description of reports being issued, see the Internet site, write to the U.S. Census Bureau, Washington, DC 20233-6100, or call Customer Services at 301-763-4100.

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 service trades in 1933. Censuses of construction, manufacturing, and the other business 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 and 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 report forms.

The range of industries covered in the economic census expanded between 1967 and 2002. 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. New for 2002 is coverage of four industries classified in the agriculture, forestry, and fishing sector under the SIC system: landscape architectural services, landscaping services, veterinary services, and pet care services.

Printed statistical reports from the 1992 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. Reports for 1997 were published primarily on the Internet and copies of 1992 reports are also available there. CD-ROMs issued from the 1987, 1992, and 1997 Economic Censuses contain databases that include all or 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 the 2002 Economic Census and related surveys is published in the *Guide to the 2002 Economic Census* at www.census.gov/econ/census02/guide. More information on the methodology, procedures, and history of the census will be published in the *History of the 2002 Economic Census* at www.census.gov/econ/www/history.html.

This page is intentionally blank.

Manufacturing

SCOPE

The Manufacturing sector (sector 31-33) comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The assembling of component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in Sector 23, Construction.

Establishments in the manufacturing sector are often described as plants, factories, or mills and characteristically use power-driven machines and materials-handling equipment. However, establishments that transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, candy stores, and custom tailors, may also be included in this sector. Manufacturing establishments may process materials or may contract with other establishments to process their materials for them. Both types of establishments are included in manufacturing.

The materials, substances, or components transformed by manufacturing establishments are raw materials that are products of agriculture, forestry, fishing, mining, or quarrying, as well as products of other manufacturing establishments. The materials used may be purchased directly from producers, obtained through customary trade channels, or secured without recourse to the market by transferring the product from one establishment to another, under the same ownership. The new product of a manufacturing establishment may be finished in the sense that it is ready for utilization or consumption, or it may be semifinished to become an input for an establishment engaged in further manufacturing. For example, the product of the alumina refinery is the input used in the primary production of aluminum; primary aluminum is the input to an aluminum wire drawing plant; and aluminum wire is the input for a fabricated wire product manufacturing establishment.

The subsectors in the manufacturing sector generally reflect distinct production processes related to material inputs, production equipment, and employee skills. In the machinery area, where assembling is a key activity, parts and accessories for manufactured products are classified in the industry of the finished manufactured item when they are made for separate sale. For example, a replacement refrigerator door would be classified with refrigerators and an attachment for a piece of metal working machinery would be classified with metal working machinery. However, components, input from other manufacturing establishments, are classified based on the production function of the component manufacturer. For example, electronic components are classified in Subsector 334, Computer and Electronic Product Manufacturing; and stampings are classified in Subsector 332, Fabricated Metal Product Manufacturing.

Manufacturing establishments often perform one or more activities that are classified outside the manufacturing sector of NAICS. For instance, almost all manufacturing has some captive research and development or administrative operations, such as accounting, payroll, or management. These captive services are treated the same as captive manufacturing activities. When the services are provided by separate establishments, they are classified to the NAICS sector where such services are primary, not in manufacturing.

The boundaries of manufacturing and the other sectors of the classification system can be somewhat blurry. The establishments in the manufacturing sector are engaged in the transformation of materials into new products. Their output is a new product. However, the definition of what constitutes a new product can be somewhat subjective. As clarification, the following activities are

considered manufacturing in NAICS: milk bottling and pasteurizing; water bottling and processing; fresh fish packaging (oyster shucking, fish filleting); apparel jobbing (assigning of materials to contract factories or shops for fabrication or other contract operations); as well as contracting on materials owned by others; printing and related activities; ready-mixed concrete production; leather converting; grinding of lenses to prescription; wood preserving; electroplating, plating, metal heat treating, and polishing for the trade; lapidary work for the trade; fabricating signs and advertising displays; rebuilding or remanufacturing machinery (i.e., automotive parts); ship repair and renovation; machine shops; and tire retreading.

Exclusions. There are activities that are sometimes considered manufacturing, but for NAICS are classified in another sector. These activities include logging, classified in Sector 11, Agriculture, Forestry, Fishing and Hunting is considered a harvesting operation; the beneficiating of ores and other minerals, classified in Sector 21, Mining, is considered part of the activity of mining; the construction of structures and fabricating operations performed at the site of construction by contractors, is classified in Sector 23, Construction; establishments engaged in breaking of bulk and redistribution in smaller lots, including packaging, repackaging, or bottling products, such as liquors or chemicals; the customized assembly of computers; sorting of scrap; mixing paints to customer order; and cutting metals to customer order, classified in Sector 42, Wholesale Trade or Sector 44-45, Retail Trade, produce a modified version of the same product, not a new product; and publishing and the combined activity of publishing and printing, classified in Sector 51, Information, perform the transformation of information into a product where as the value of the product to the consumer lies in the information content, not in the format in which it is distributed (i.e., the book or software diskette).

The tabulations for this sector do not include central administrative offices, warehouses, or other establishments that serve manufacturing establishments within the same organization. Data for such establishments are classified according to the nature of the service they provide. For example, separate headquarters establishments are reported in NAICS Sector 55, Management of Companies and Enterprises.

The reports described below exclude establishments of firms with no paid employees. These “nonemployers,” typically self-employed individuals or partnerships operating businesses that they have not chosen to incorporate, are reported separately in Nonemployer Statistics. The contribution of nonemployers, relatively small for this sector, may be examined at www.census.gov/nonemployerimpact.

The reports described below cover all manufacturing establishments with one or more paid employees.

Definitions. Industry categories are defined in Appendix B, NAICS Codes, Titles, and Descriptions. Other terms are defined in Appendix A, Explanation of Terms.

REPORTS

The following reports provide statistics on this sector:

Industry Series. There are 473 reports, each covering a single NAICS industry (six-digit code). 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. The industry reports also include data for states with 100 employees or more in the industry. The data in industry reports are preliminary and subject to change in the following reports.

Geographic Area Series. There are 51 separate reports, one for each state and the District of Columbia. Each state report presents similar statistics at the “all manufacturing” level for each state and its metropolitan and micropolitan areas 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.

Subject Series:

x Manufacturing

2002 Economic Census

- **Industry-Product Analysis Summary.** This report presents value of shipments, value of product shipments, percentage of product shipments of the total value of shipments, and percentage of distribution of value of product shipments on the NAICS six-digit industry level and by the six- and seven-digit product code levels. It also includes miscellaneous receipts at the six- and seven-digit product code levels by NAICS six-digit industry levels.
- **General Summary.** This 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.
- **Product Summary.** This report summarizes the products data published in the industry reports. This report also includes a table with data for products that are primary to more than one industry, which are not in the industry reports.
- **Materials Summary.** This report summarizes the materials data published in the industry reports.
- **Concentration Ratio Summary.** This report publishes data on the percentage of value of shipments and value added accounted for by the 4-, 8-, 20-, and 50-largest companies for each manufacturing industry. Also shown in this report are Herfindahl-Herschmann indexes for each industry.
- **Location of Manufacturing Plants Summary.** This report contains 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.

ZIP Code Statistics. This report contains statistics on the number of establishments for the three- and six-digit NAICS industry by employment-size of the establishment by ZIP Code.

Other reports. Data for this sector are also included in reports with multisector coverage, including Nonemployer Statistics, Comparative Statistics, Bridge Between 2002 NAICS and 1997 NAICS, Business Expenses, and the Survey of Business Owners reports.

GEOGRAPHIC AREAS COVERED

The level of geographic detail varies by report. Maps are available at www.census.gov/econ2002maps. Notes specific to areas in the state are included in Appendix D, Geographic Notes.

1. The United States as a whole.
2. States and the District of Columbia.
3. Metropolitan and micropolitan statistical areas with 250 employees or more. A core based statistical areas (CBSA) contains a core area with a substantial population nucleus, together with adjacent communities having a high degree of social and economic integration with that core. CBSAs are differentiated into metropolitan and micropolitan statistical areas based on size criteria. Both metropolitan and micropolitan areas are defined in terms of entire counties, and are listed in Appendix E, Metropolitan and Micropolitan Statistical Areas.
 - a. Metropolitan Statistical Areas (metro areas). Metro areas have at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.
 - b. Micropolitan Statistical Areas (micro areas). Micro areas have at least one urban cluster of at least 10,000 but less than 50,000 population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.
 - c. Metropolitan Divisions (metro divisions). If specified criteria are met, a metro area containing a single core with a population of 2.5 million or more may be subdivided to form smaller groupings of counties referred to as Metropolitan Divisions.

-
- d. Combined Statistical Areas (combined areas). If specified criteria are met, adjacent metro and micro areas, in various combinations, may become the components of a new set of areas called Combined Statistical Areas. The areas that combine retain their own designations as metro or micro areas within the larger combined area.
4. Counties and county equivalents defined as of January 1, 2002, with 500 employees or more. Counties are the primary divisions of states, except in Louisiana where they are called parishes and in Alaska where they are called boroughs, census areas, and city and boroughs. Maryland, Missouri, Nevada, and Virginia have one place or more that is independent of any county organization and constitutes primary divisions of their states. These places are treated as counties and as places.
 5. Economic places with 500 employees or more.
 - a. Municipalities of 2,500 inhabitants or more defined as of January 1, 2002. These are areas of significant population incorporated as cities, boroughs, villages, or towns according to the 2000 Census of Population. For the economic census, boroughs and census areas in Alaska and boroughs in New York are not included in this category.
 - b. Consolidated cities defined as of January 1, 2002. Consolidated cities are consolidated governments that consist of separately incorporated municipalities.
 - c. Townships in Michigan, New Jersey, and Pennsylvania, and towns in New York, Wisconsin, and the six New England states with 10,000 inhabitants or more (according to the 2000 Census of Population).
 - d. Balance of county. Areas outside the entities listed above, including incorporated municipalities with populations of fewer than 2,500, town and townships not qualifying as noted above, and the remainders of counties outside places are categorized as "Balance of county."

DOLLAR VALUES

All dollar values presented are expressed in current dollars; i.e., 2002 data are expressed in 2002 dollars, and 1997 data, in 1997 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.

COMPARABILITY OF THE 1997 AND 2002 ECONOMIC CENSUSES

Both the 2002 Economic Census and the 1997 Economic Census present data based on the North American Industry Classification System (NAICS). While there were revisions to selected industries for 2002, this sector is not affected by those revisions.

For 2002, there have been several additional data tables added, which did not exist in 1997. These tables for 2002 include products primary to more than one industry, industry-product analysis, e-commerce value of shipments, and leased and nonleased detail employment statistics by subsectors.

RELIABILITY OF DATA

All data compiled for this sector are subject to nonsampling errors. Nonsampling errors can be attributed to many sources: inability to identify all cases in the actual universe; definition and classification difficulties; differences in the interpretation of questions; errors in recording or coding the data obtained; and other errors of collection, response, coverage, processing, and estimation for missing or misreported data. Selected data in tables titled "Detailed Statistics" are based on the Annual Survey of Manufactures and are subject to sampling errors as well as nonsampling errors.

No direct measurement of these effects has been obtained except for estimation for missing or misreported data, as by the percentages shown in the tables. Precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize the effects of nonsampling errors. More information on the reliability of the data is included in Appendix C, Methodology.

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 in a specific industry or geographic area is not considered a disclosure; therefore, this information may be released even though other information is withheld. Techniques employed to limit disclosure are discussed at www.census.gov/epcd/ec02/disclosure.htm.

The disclosure analysis for "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. Nonetheless, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures, which 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 55,000 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 the Current Industrial Reports (CIR) program. The CIR program publishes selected detailed product statistics for selected manufacturing industries at the U.S. level annually and, in some cases, monthly and/or quarterly. 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.

In addition, the County Business Patterns program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county, and Statistics of U.S. Businesses provides annual statistics classified by the employment size of the enterprise, further classified by industry for the United States, and by broader categories for states and metropolitan areas.

CONTACTS FOR DATA USERS

Questions about these data may be directed to the U.S. Census Bureau, Manufacturing & Construction Division, Information Services Center, 301-763-4673 or ask.census.gov.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used with these 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
S	Withheld because estimates did not meet publication standards
X	Not applicable
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
nsk	Not specified by kind
-	Represents zero (page image/print only)
(CC)	Consolidated city
(IC)	Independent city

Table 1. Historical Statistics for the Industry: 2002 and Earlier Years

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year ¹	Com- panies ²	All estab- lish- ments ³	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expendi- tures (\$1,000)	
			Number ⁴	Payroll (\$1,000)	Number ⁴	Hours (1,000)	Wages (\$1,000)					
333512, Machine tool (metal cutting types) manufacturing	2002..	342	372	18 372	875 447	9 439	17 481	369 725	1 431 882	1 618 691	3 153 990	'61 536
	2001..	N	N	21 636	1 035 209	11 643	23 843	441 646	1 698 877	2 236 113	4 090 063	106 835
	2000..	N	N	24 859	1 152 937	13 939	28 766	539 012	2 175 278	2 510 456	4 694 858	146 852
	1999..	N	N	25 497	1 159 444	14 889	30 177	540 117	2 081 018	2 483 463	4 601 568	186 081
	1998..	N	N	27 539	1 196 365	15 972	32 382	592 461	2 410 231	2 866 757	5 244 020	224 532
	1997..	368	401	29 577	1 274 460	17 051	35 366	629 388	2 666 276	2 813 536	5 331 245	142 228

¹Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during the year.

⁴Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 2. Industry Statistics for Selected States: 2002

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	E ¹	All establishments ²		All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
		Total	With 20 employees or more	Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
333512, Machine tool (metal cutting types) manufacturing												
United States	1	372	202	18 372	875 447	9 439	17 481	369 725	1 431 882	1 618 691	3 153 990	'61 536
California	—	30	12	2 469	131 115	1 102	1 392	49 259	188 272	176 125	362 630	'2 889
Connecticut	1	12	5	905	32 959	302	635	11 487	95 855	115 296	218 245	'9 149
Illinois	4	30	15	1 237	58 757	664	1 356	24 668	120 221	103 545	222 075	'6 434
Michigan	1	90	55	3 136	161 815	1 841	3 681	80 187	222 532	281 278	574 749	'9 382
New Hampshire	4	4	3	246	12 468	127	241	4 524	13 191	14 572	30 887	'499
New York	—	16	9	2 019	94 584	1 446	2 169	45 855	130 639	190 562	314 552	'7 304
Ohio	—	35	19	1 778	84 826	772	1 290	30 922	80 262	150 851	259 828	'3 530
Pennsylvania	2	14	8	675	33 637	357	615	12 779	63 714	39 526	115 020	'886
South Carolina	2	6	3	247	11 571	159	353	6 299	18 385	14 564	34 007	'347
Texas	—	5	3	151	5 942	77	169	3 131	11 546	11 347	23 495	'604
Washington	—	5	4	292	17 724	102	207	4 615	70 079	25 533	65 089	1 195
Wisconsin	1	28	16	1 242	57 064	687	1 336	25 672	105 525	92 012	199 126	'4 381

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 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.

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

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 3. Detailed Statistics by Industry: 2002

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
333512, Machine tool (metal cutting types) manufacturing	
Companies ¹	number.. 342
All establishments ²	number.. 372
Establishments with 1 to 19 employees	number.. 170
Establishments with 20 to 99 employees	number.. 171
Establishments with 100 employees or more	number.. 31
All employees ³	number.. 18 372
Total compensation	\$1,000.. 1 042 185
Annual payroll	\$1,000.. 875 447
Total fringe benefits	\$1,000.. 166 738
Production workers, average for year	number.. 9 439
Production workers on March 12	number.. 9 641
Production workers on May 12	number.. 9 536
Production workers on August 12	number.. 9 316
Production workers on November 12	number.. 9 219
Production worker hours	1,000.. 17 481
Production worker wages	\$1,000.. 369 725
Total cost of materials	\$1,000.. 1 618 691
Materials, parts, containers, packaging, etc., used	\$1,000.. 1 156 023
Resales	\$1,000.. 379 218
Purchased fuels	\$1,000.. 4 944
Purchased electricity	\$1,000.. 23 018
Contract work	\$1,000.. 55 488
Quantity of electricity purchased for heat and power	1,000 kWh.. 358 370
Quantity of electricity generated less sold for heat and power	1,000 kWh.. D
Total value of shipments	\$1,000.. 3 153 990
Primary products value of shipments	\$1,000.. 2 370 750
Secondary products value of shipments	\$1,000.. 189 849
Total miscellaneous receipts	\$1,000.. 593 391
Value of resales	\$1,000.. 466 622
Contract receipts	\$1,000.. 28 307
Other miscellaneous receipts	\$1,000.. 98 462
Primary products specialization ratio	percent.. 93
Value of primary products shipments made in all industries	\$1,000.. 2 560 951
Value of primary products shipments made in this industry	\$1,000.. 2 370 750
Value of primary products shipments made in other industries	\$1,000.. 190 201
Coverage ratio	percent.. 93
Value added	\$1,000.. 1 431 882
Total inventories, beginning of year	\$1,000.. 1 005 736
Finished goods inventories	\$1,000.. 311 333
Work-in-process inventories	\$1,000.. 455 434
Materials and supplies inventories	\$1,000.. 238 969
Total inventories, end of year	\$1,000.. 891 351
Finished goods inventories	\$1,000.. 267 295
Work-in-process inventories	\$1,000.. 396 055
Materials and supplies inventories	\$1,000.. 228 001
Gross value of depreciable assets (acquisition costs) at beginning of year	\$1,000.. 1 568 920
Total capital expenditures (new and used)	\$1,000.. 161 536
Buildings and other structures (new and used)	\$1,000.. 19 033
Machinery and equipment (new and used)	\$1,000.. 152 503
Automobiles, trucks, etc., for highway use	\$1,000.. 3 082
Computers and peripheral data processing equipment	\$1,000.. 8 496
All other expenditures for machinery and equipment	\$1,000.. 140 925
Total retirements	\$1,000.. 187 306
Gross value of depreciable assets at end of year	\$1,000.. 1 543 150
Depreciation charges during year	\$1,000.. 192 155
Total rental payments	\$1,000.. 40 995
Buildings and other structures	\$1,000.. 24 546
Machinery and equipment	\$1,000.. 16 449
Total other expenses ⁴	\$1,000.. 248 069
Response coverage ratio ⁵	percent.. 73
Repair and maintenance services of buildings and/or machinery ⁴	\$1,000.. 11 100
Communications services ⁴	\$1,000.. 8 580
Legal services ⁴	\$1,000.. 5 525
Accounting, auditing, and bookkeeping services ⁴	\$1,000.. 3 282
Advertising and promotional services ⁴	\$1,000.. 17 843
Expensed computer hardware and supplies and purchased computer services ⁴	\$1,000.. 6 096
Refuse removal (including hazardous waste) services ⁴	\$1,000.. 1 376
Management consulting and administrative services ⁴	\$1,000.. 4 350
Taxes and license fees ⁴	\$1,000.. 11 486
All other expenses ⁴	\$1,000.. 178 432

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.

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Based on 2002 Annual Survey of Manufactures (ASM) sample data.

⁵A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 4. Industry Statistics by Employment Size: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E ¹	All establishments ²	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ³	Payroll (\$1,000)	Number ³	Hours (1,000)	Wages (\$1,000)				
333512, Machine tool (metal cutting types) manufacturing											
All establishments	1	372	18 372	875 447	9 439	17 481	369 725	1 431 882	1 618 691	3 153 990	'61 536
Establishments with—											
1 to 4 employees	4	34	104	5 121	58	106	2 398	7 299	8 398	16 558	'349
5 to 9 employees	2	54	363	15 968	215	325	7 122	23 679	42 897	81 934	'893
10 to 19 employees	3	82	1 163	51 011	700	1 233	25 454	81 365	70 958	153 326	'4 532
20 to 49 employees	2	119	3 714	168 568	2 174	4 438	82 513	271 925	219 934	509 708	'13 138
50 to 99 employees	2	52	3 718	182 695	2 047	4 351	82 196	296 126	317 060	619 398	'12 315
100 to 249 employees	1	22	3 261	160 882	1 676	3 419	71 078	317 300	317 351	640 269	'13 485
250 to 499 employees	—	3	979	46 276	424	691	13 883	69 730	83 752	170 912	D
500 to 999 employees	—	5	h	D	D	D	D	D	D	D	D
1,000 to 2,499 employees	—	1	g	D	D	D	D	D	D	D	—
2,500 employees or more	—	—	—	—	—	—	—	—	—	—	—
Administrative records ⁴	9	3	9	385	6	12	251	1 719	1 523	3 242	'39

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 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.

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

³Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

⁴Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 5. Industry Statistics by Primary Product Class Specialization: 2002

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments ¹	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number ²	Payroll (\$1,000)	Number ²	Hours (1,000)	Wages (\$1,000)				
333512	Machine tool (metal cutting types) manufacturing	372	18 372	875 447	9 439	17 481	369 725	1 431 882	1 618 691	3 153 990	'61 536
3335121	Metal gear cutting machines	7	1 052	46 876	513	924	20 396	15 756	99 212	116 064	D
3335122	Metal grinding, polishing, buffing, honing, and lapping machines, except gear-tooth grinding, lapping, polishing, and buffing machines ...	51	2 438	116 389	1 261	2 513	48 264	194 899	170 772	383 579	'4 688
3335123	Metal lathes (turning machines) numerically and nonnumerically controlled	15	1 681	80 114	955	1 797	34 481	181 805	238 032	443 698	'4 654
3335124	Metal milling machines (excluding machining centers)	5	323	13 535	209	426	7 205	30 455	14 882	48 068	D
3335125	Machine tools for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only)	14	416	22 518	178	387	7 428	74 107	39 105	80 976	'1 368
3335126	Parts for metal cutting-type machine tools (sold separately), including rebuilt and remanufactured metal cutting machine tools	72	2 934	135 548	1 485	2 603	54 674	190 238	220 540	425 981	'9 458
3335127	Metal machining centers (multifunction numerically controlled machines)	19	2 467	127 738	1 138	1 530	52 166	206 521	205 736	415 245	'4 206
3335128	Metal station type machines	8	826	48 564	441	934	22 227	58 371	123 551	221 096	'2 102
3335129	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, garages, etc.)	51	2 922	130 758	1 456	2 923	56 124	262 782	312 573	583 611	'18 156
333512A	Metal boring machines and drilling machines (excluding machining centers)	17	1 112	51 484	538	1 028	17 949	94 624	79 567	177 944	'5 737

¹Includes establishments with payroll at any time during the year.

²Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6a. Products Statistics: 2002 and 1997

[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. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
333512	Machine tool (metal cutting types) manufacturing	2002.. N 1997.. N	X X	X X	2 560 951 4 737 311
3335121	Metal gear cutting machines	2002.. N 1997.. N	X X	X X	80 206 181 261
33351212	Metal gear cutting machines	2002.. N 1997.. N	X X	X X	80 206 N
3335121200	Metal gear cutting machines ¹	2002.. 12 1997.. N	X X	X X	80 206 N
3335122	Metal grinding, polishing, buffing, honing, and lapping machines, except gear-tooth grinding, lapping, polishing, and buffing machines	2002.. N 1997.. N	X X	X X	312 516 596 877
33351221	Metal grinding, polishing, buffing, honing, and lapping machines, except gear-tooth grinding, lapping, polishing, and buffing machines	2002.. N 1997.. N	X X	X X	312 516 596 877
3335122100	Metal grinding, polishing, buffing, honing, and lapping machines, except gear-tooth grinding, lapping, polishing, and buffing machines ¹	2002.. 79 1997.. 105	X X	X X	312 516 596 877
3335123	Metal lathes (turning machines) numerically and nonnumerically controlled	2002.. N 1997.. N	X X	X X	182 053 489 775
33351231	Metal lathes (turning machines) numerically and nonnumerically controlled	2002.. N 1997.. N	X X	X X	182 053 489 775
3335123100	Metal lathes (turning machines) numerically and nonnumerically controlled ¹	2002.. 29 1997.. 51	X X	X X	182 053 489 775
3335124	Metal milling machines (excluding machining centers)	2002.. N 1997.. N	X X	X X	51 269 350 026
33351241	Metal milling machines (excluding machining centers)	2002.. N 1997.. N	X X	X X	51 269 350 026
3335124100	Metal milling machines (excluding machining centers) ¹	2002.. 22 1997.. 44	X X	X X	51 269 350 026
3335125	Machine tools for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only)	2002.. N 1997.. N	X X	X X	78 323 54 937
33351251	Machine tools for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only)	2002.. N 1997.. N	X X	X X	72 326 54 937
3335125101	Metal drilling machines for home workshops, laboratories, garages, etc.	2002.. 4 1997.. 6	X X	X X	D 9 531
3335125106	Metal grinding and polishing machines for home workshops, laboratories, garages, etc. (including crankshaft regrinding and valve grinding machines)	2002.. 9 1997.. 5	X X	X X	D D
3335125116	Metal sawing and cut-off machines for home workshops, laboratories, garages, etc.	2002.. 4 1997.. 8	X X	X D	2 891 D
3335125198	Other metalworking (or primarily metalworking) machines for home workshops, laboratories, garages, etc. (including automotive cylinder reboring machines and lathes)	2002.. 11 1997.. N	X X	X X	15 868 N
3335125Y	Machine tools for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only), nsk	2002.. N 1997.. N	X X	X X	5 997 -
3335125YVW	Machine tools for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only), nsk	2002.. N 1997.. N	X X	X X	5 997 -
3335126	Parts for metal cutting-type machine tools (sold separately), including rebuilt and remanufactured metal cutting machine tools	2002.. N 1997.. N	X X	X X	566 180 714 118
33351261	Parts for metal cutting type machine tools (sold separately), rebuilt metal cutting machine tools, and remanufactured metal cutting machine tools	2002.. N 1997.. N	X X	X X	505 619 712 803
3335126101	Parts for metal cutting machine tools (sold separately)	2002.. 122 1997.. 128	X X	X X	388 596 550 271
3335126107	Rebuilt metal cutting type machine tools (including machines returned to same configuration they were in when new from factory)	2002.. 33 1997.. N	X X	X X	49 453 N
3335126111	Remanufactured metal cutting-type machine tools (including machines in which the original carcass is reused and all possible modern improvements have been incorporated) ¹	2002.. 24 1997.. N	X X	X X	67 570 N
3335126Y	Parts for metal cutting type machine tools (sold separately), rebuilt metal cutting machine tools, and remanufactured metal cutting machine tools, nsk	2002.. N 1997.. N	X X	X X	60 561 1 315
3335126YVW	Parts for metal cutting type machine tools (sold separately), rebuilt metal cutting machine tools, and remanufactured metal cutting machine tools, nsk	2002.. N 1997.. N	X X	X X	60 561 1 315
3335127	Metal machining centers (multifunction numerically controlled machines)	2002.. N 1997.. N	X X	X X	382 324 932 619
33351271	Metal machining centers (multifunction numerically controlled machines)	2002.. N 1997.. N	X X	X X	382 324 932 619
3335127100	Metal machining centers (multifunction numerically controlled machines) ¹	2002.. 32	X	X	382 324

See footnotes at end of table.

Table 6a. Products Statistics: 2002 and 1997—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
333512	Machine tool (metal cutting types) manufacturing—Con.				
3335127	Metal machining centers (multifunction numerically controlled machines)—Con.				
33351271	Metal machining centers (multifunction numerically controlled machines)—Con.				
3335127100	Metal machining centers (multifunction numerically controlled machines) ¹ —Con.	1997.. 56	X	X	932 619
3335128	Metal station type machines	2002.. N	X	X	138 461
		1997.. N	X	X	543 289
33351281	Metal station type machines	2002.. N	X	X	138 461
		1997.. N	X	X	543 289
3335128100	Metal station type machines ¹	2002.. 11	X	X	138 461
		1997.. 26	X	X	543 289
3335129	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, garages, etc.)	2002.. N	X	X	458 447
		1997.. N	X	X	450 333
33351291	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, garages, etc.)	2002.. N	X	X	458 447
		1997.. N	X	X	450 333
3335129100	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, garages, etc.) ¹	2002.. 88	X	X	458 447
		1997.. 119	X	X	450 333
333512A	Metal boring machines and drilling machines (excluding machining centers)	2002.. N	X	X	114 665
		1997.. N	X	X	238 185
333512A1	Metal boring machines and drilling machines (excluding machining centers)	2002.. N	X	X	114 665
		1997.. N	X	X	238 185
333512A100	Metal boring machines and drilling machines (excluding machining centers) ¹	2002.. 34	X	X	114 665
		1997.. 55	X	X	238 185
333512W	Machine tool (metal cutting types) manufacturing, nsk, total	2002.. N	X	X	196 507
		1997.. N	X	X	185 891
333512WY	Machine tool (metal cutting types) manufacturing, nsk, total	2002.. N	X	X	196 507
		1997.. N	X	X	185 891
333512WYWW	Machine tool (metal cutting types) manufacturing, nsk, for nonadministrative-record establishments	2002.. N	X	X	196 507
		1997.. N	X	X	185 138
333512WYWY	Machine tool (metal cutting types) manufacturing, nsk, for administrative-record establishments	2002.. N	X	X	—
		1997.. N	X	X	753

¹For additional detail, see Current Industrial Report MQ333W, Metalworking Machinery.

Note 1: For some establishments, data have been estimated from central unit values that 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.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6b. Product Class Shipments for Selected States: 2002 and 1997

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)	
3335121	Metal gear cutting machines		
	United States	2002.. 80 206 1997.. 181 261	
	Michigan	2002.. 10 252 1997.. N	
3335122	Metal grinding, polishing, buffing, honing, and lapping machines, except gear-tooth grinding, lapping, polishing, and buffing machines		
	United States	2002.. 312 516 1997.. 596 877	
	Illinois	2002.. 5 032 1997.. 31 384	
	Michigan	2002.. 92 054 1997.. 130 869	
	New York	2002.. 5 607 1997.. N	
	Ohio	2002.. 12 760 1997.. 84 126	
	Pennsylvania	2002.. 59 183 1997.. N	
	Wisconsin	2002.. 5 037 1997.. 12 652	
	3335123	Metal lathes (turning machines) numerically and nonnumerically controlled	
		United States	2002.. 182 053 1997.. 489 775
Michigan		2002.. 15 061 1997.. 133 403	
3335124	Metal milling machines (excluding machining centers)		
	United States	2002.. 51 269 1997.. 350 026	
	Michigan	2002.. 3 625 1997.. 13 095	
	Ohio	2002.. 17 513 1997.. N	
3335125	Machine tools for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only)		
	United States	2002.. 78 323 1997.. 54 937	
	California	2002.. 4 172 1997.. N	
	Michigan	2002.. 13 699 1997.. 3 973	
	Ohio	2002.. 7 060 1997.. 13 313	
3335126	Parts for metal cutting-type machine tools (sold separately), including rebuilt and remanufactured metal cutting machine tools		
	United States	2002.. 566 180 1997.. 714 118	
	California	2002.. 64 603 1997.. N	
	Connecticut	2002.. 6 161 1997.. 21 217	
	Illinois	2002.. 15 140 1997.. 93 343	
	Michigan	2002.. 126 337 1997.. 136 398	
	New York	2002.. 65 132 1997.. 63 616	
	Ohio	2002.. 108 355 1997.. 205 803	
	Pennsylvania	2002.. 18 501 1997.. 21 638	
	Wisconsin	2002.. 40 505 1997.. 56 697	
	3335127	Metal machining centers (multifunction numerically controlled machines)	
		United States	2002.. 382 324 1997.. 932 619
		Michigan	2002.. 29 906 1997.. 35 930
3335128	Metal station type machines		
	United States	2002.. 138 461 1997.. 543 289	
	Michigan	2002.. 98 376 1997.. 398 376	
3335129	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, garages, etc.)		
	United States	2002.. 458 447 1997.. 450 333	
	California	2002.. 18 460 1997.. 30 017	
	Illinois	2002.. 35 396 1997.. 43 560	
	Michigan	2002.. 92 277 1997.. 95 050	
	Ohio	2002.. 34 342 1997.. 62 739	
	Wisconsin	2002.. 25 529 1997.. 41 843	

See footnotes at end of table.

Table 6b. Product Class Shipments for Selected States: 2002 and 1997—Con.

[Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in Table 2. Also, product classes are not shown if they are miscellaneous or "not specified by kind" classes. Statistics for some states are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 2002. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographic definitions, see note at end of table. For information on geographic areas followed by *, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

NAICS product class code	Product class and geographic area	Value of product shipments (\$1,000)
333512A	Metal boring machines and drilling machines (excluding machining centers)	
	United States.....	2002.. 114 665
		1997.. 238 185
	Illinois.....	2002.. 39 474
		1997.. 22 945
	Ohio.....	2002.. 3 545
		1997.. 11 307
	Wisconsin.....	2002.. 23 022
		1997.. 27 867

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

Table 7. Materials Consumed by Kind: 2002 and 1997

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
333512	Machine tool (metal cutting types) manufacturing		
00900001	Total materials	2002.. X	1 156 023
		1997.. X	2 260 534
33399601	Fluid power pumps, motors, and hydrostatic transmissions (hydraulic and pneumatic)	2002.. X	13 783
		1997.. X	43 237
33399501	Fluid power cylinders and rotary actuators (hydraulic and pneumatic)	2002.. X	8 142
		1997.. X	8 955
33399901	Fluid power filters (hydraulic and pneumatic)	2002.. X	2 400
		1997.. X	3 128
33291203	Fluid power hose and tube fittings and assemblies (hydraulic and pneumatic)	2002.. X	7 310
		1997.. X	8 896
33291207	Fluid power valves (hydraulic and pneumatic)	2002.. X	5 773
		1997.. X	17 613
33272203	Metal bolts, nuts, screws, washers, rivets, and other screw machine products	2002.. X	13 764
		1997.. X	29 172
33200051	Other fabricated metal products (excluding fluid power products and forgings)	2002.. X	49 988
		1997.. X	N
33210000	Forgings	2002.. X	2 525
		1997.. X	N
33151001	Iron and steel castings (rough and semifinished)	2002.. X	50 180
		1997.. X	178 001
33152011	Nonferrous (aluminum, copper, etc.) castings (rough and semifinished)	2002.. X	2 821
		1997.. X	8 700
33120007	Steel bars, bar shapes, and plate (excluding castings, forgings, and fabricated metal products)	2002.. X	43 510
		1997.. X	63 625
33120016	Steel sheet and strip (including tinplate)	2002.. X	D
		1997.. X	N
33120069	Steel structural shapes (excluding castings, forgings, and fabricated metal products)	2002.. X	D
		1997.. X	8 843
33120092	All other steel shapes and forms (excluding castings, forgings, and fabricated metal products)	2002.. X	13 342
		1997.. X	N
331000AJ	Nonferrous metal shapes and forms (excluding castings, forgings, and fabricated metal products)	2002.. X	3 614
		1997.. X	10 824
33531209	Fractional horsepower electric timing motors, synchronous and subsynchronous (less than 1 hp)	2002.. X	9 019
		1997.. X	26 860
33531217	Other fractional horsepower electric motors (less than 1 hp)	2002.. X	2 241
		1997.. X	20 412
33531221	Integral horsepower electric motors and generators (1 hp or more)	2002.. X	12 642
		1997.. X	25 202
001900B1	Electrical transmission, distribution, and control equipment	2002.. X	16 659
		1997.. X	85 123
33500007	Electrical industrial capacitors, resistors, rheostats, and coil windings	2002.. X	3 287
		1997.. X	23 855
33531409	Numerical controls for metalworking machinery (excluding programmable)	2002.. X	28 651
		1997.. X	74 810
33531411	Programmable controllers for metalworking machinery	2002.. X	27 688
		1997.. X	79 542
001900C4	Printed circuit assemblies, loaded boards, and modules (printed circuit boards with inserted electronic components)	2002.. X	16 231
		1997.. X	N
33441200	Printed circuit boards (without inserted components) for electronic circuitry	2002.. X	2 253
		1997.. X	N
33441300	Semiconductors (including transistors, diodes, rectifiers, and integrated circuits), for electronic circuitry	2002.. X	358
		1997.. X	N
001900D3	All other miscellaneous components and accessories, for electronic circuitry (excluding tubes)	2002.. X	5 364
		1997.. X	N
33451501	Electrical instrument mechanisms and meter movements (including instrument relays)	2002.. X	6 808
		1997.. X	N
33422001	Electronic communication equipment	2002.. X	174
		1997.. X	N
33331401	Optical instruments and lenses (excluding sighting, tracking, and fire control)	2002.. X	148
		1997.. X	N
33299105	Ball bearings (mounted or unmounted)	2002.. X	13 686
		1997.. X	30 260
33299103	Roller bearings (mounted or unmounted)	2002.. X	6 150
		1997.. X	8 298
33361200	Mechanical speed changers, gears, and industrial high-speed drives	2002.. X	10 187
		1997.. X	33 236
32192001	Wood boxes, pallets, skids, and containers	2002.. X	4 443
		1997.. X	6 440
33351503	Cutting tools for machine tools	2002.. X	17 347
		1997.. X	89 178
32610007	Fabricated plastics products (excluding gaskets, hoses, and belting)	2002.. X	2 851
		1997.. X	N
32220017	Paper and paperboard containers (including shipping sacks and other paper packaging supplies)	2002.. X	1 522
		1997.. X	N
00970099	All other materials and components, parts, containers, and supplies	2002.. X	332 929
		1997.. X	871 490
00971000	Materials, ingredients, containers, and supplies, nsk	2002.. X	382 038
		1997.. X	504 834

Note 1: For some establishments, data have been estimated from central unit values that 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.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Appendix A.

Explanation of Terms

BEGINNING- AND END-OF-YEAR INVENTORIES

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

Inventory data by stage of fabrication

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

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

COST OF MATERIALS

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

Included in this item are:

1. Cost of parts, components, containers, etc. Includes all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year.
2. Cost of products bought and sold in the same condition.
3. Cost of fuels consumed for heat and power. Includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.
4. Cost of purchased electricity. The cost of purchased electric energy represents the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
5. Cost of contract work. This term applies to work done by others on materials furnished by the manufacturing establishment. The actual cost of the material is to be reported on the cost of materials, parts, and containers line of this item. The term “Contract Work” refers to the fee a company pays to another company to perform a service.

Specific materials consumed

In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials that were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. If less than \$25,000 of a listed material was consumed by an establishment, the cost data could be reported in the "Cost of all other materials" Census material code 00970099.

Also, the cost of materials for small establishments for which administrative records or short forms were used was imputed into the "Materials not specified by kind" Census materials code 00971000.

Duplication in cost of materials and value of shipment

The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries.

Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the survey.

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

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

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

SELECTED PURCHASED SERVICES

Annual Survey of Manufactures (ASM) establishments were requested to provide information on the cost of selected purchased services for the repair and maintenance services of buildings and/or machinery; communication services; legal services; accounting, auditing, and bookkeeping services; advertising and promotional services; expensed computer hardware and supplies and purchased computer services; refuse removal services; management consulting and administrative services; taxes and license fees; and all other expenses not previously stated. Each of these items reflects the costs paid directly by the establishment and excludes salaries paid to employees of the establishment for these services. These expenses are normally considered as nonproduction related costs purchased from other companies.

Included in the cost of selected purchased services for the repair and maintenance services of buildings and/or 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. Excluded from this item are extensive repairs or reconstruction that was capitalized, which is considered capital expenditures; costs incurred directly by the establishment in using its own work force to perform repairs and maintenance work; and repairs and maintenance provided by the building or machinery owner as part of the rental contract.

Included in the cost of selected purchased services for communication is the actual expense incurred or payable during the year for any type of communication. Such types of communication include telephone, data transmission, telegraph, Internet, connectivity, FAX, telex, photo transmission, paging, cellular telephone, on-line access and related services, etc.

Included in the cost of selected purchased services for legal services are payments made to other companies for these services that were paid directly by the establishment. Excluded are the salaries paid to employees of the establishment for these services.

Included in the cost of selected accounting, auditing, and bookkeeping services are payments made to other companies for these services that were paid directly by the establishment. Excluded are the salaries paid to employees of this establishment for these services.

Included in the cost of selected advertising and promotional services are payments made to other companies for these services that were paid directly by the establishment. These include payments for printing, media coverage, and other services and materials. Excluded are the salaries paid to employees of this establishment for these services.

Included in the cost of selected expensed computer hardware and supplies and purchased computer services are actual expenses incurred or payable during the year for this item. Purchases for computer hardware and supplies, computer services (software, data transmission, processing services, Web design, etc.) are all included. Excluded are services provided by other establishments of the same company (such as a separate central data processing unit).

Included in the cost of selected purchased refuse removal services are payments made to other companies for these services that were paid directly by the establishment, including costs for hazardous waste removal or treatment. Excluded are all costs included in rental payments or as capital expenditures and the salaries paid to employees of the establishment for these services.

Included in the cost of selected purchased management consulting and administrative services are payments made to other companies for these services that were paid directly by the establishment. Excluded are the salaries paid to employees of this establishment for these services.

Included in the cost of selected purchased taxes and license fees are payments made to other companies for these services that were paid directly by the establishment, excluding income, sales, payroll, and excise taxes. Excluded are also the salaries paid to employees of this establishment for these services.

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 nonreporters).

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.

NUMBER OF 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 that included the 12th of the months specified on the report form. Included are employees on paid sick leave, paid holidays, and paid vacations; not included are proprietors and partners of unincorporated businesses.

These individuals comprise of all full-time and part-time employees who are on the payrolls of establishments who worked or received pay for any part of the pay period including the 12th of March, May, August, and November.

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

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

All Other Employees

The “other employees” 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.

TOTAL FRINGE BENEFITS

This item is the employer’s costs for social security tax, unemployment tax, workmen’s compensation insurance, state disability insurance pension plans, stock purchase plans, union-negotiated benefits, life insurance premiums, and insurance premiums on hospital and medical plans for employees.

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

GROSS VALUE OF DEPRECIABLE ASSETS (ACQUISITION COSTS) 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 (BOY) and end of year (EOY). 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.

ESTABLISHMENT

An establishment is a single physical location where business is conducted or where services or industrial operations are performed. Data in this sector includes those establishments where manufacturing is performed. A separate report was required for each manufacturing establishment (plant) with one employee or more that were in operation at any time during the year.

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.

Company

A company or ("enterprise") is comprised of all the establishments that operate under the ownership or control of a single organization. A company may be a business, service, or membership organization; consist of one or several establishments; and operate at one or several locations. It includes all subsidiary organizations, all establishments that are majority-owned by the company or any subsidiary, and all the establishments that can be directed or managed by the company or any subsidiary.

A company may have one or many establishments. Examples include product and service sales offices (retail and wholesale), industrial production plants, processing or assembly operations, mines or well sites, and support operations (such as an administrative office, warehouse, customer service center, or regional headquarters). Each establishment should receive, complete, and return a separate census form.

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.

PAYROLL

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

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

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

PRODUCT CODES AND CLASSES OF PRODUCTS

NAICS United States industries are identified by a six-digit code. The longer code accommodates the large number of sectors and allows more flexibility in designing subsectors. Each product or service is assigned a ten-digit code. The product coding structure represents an extension by the Census Bureau of the six-digit industry classifications of the manufacturing and mining sectors. The classification system operates so that the industrial coverage is progressively narrower with the successive addition of digits.

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

In the manufacturing sector for 2002, 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). Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are 1,450 product classes (seven-digit codes), 5,674 census products, and an additional 3,746 ten-digit product 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.

PRODUCTION-WORKER HOURS

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

QUANTITY OF ELECTRICITY PURCHASED FOR HEAT AND POWER

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

RENTAL PAYMENTS

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

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments.

However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

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

RETIREMENTS OF DEPRECIABLE ASSETS

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

CAPITAL EXPENDITURES FOR NEW AND USED PLANT AND EQUIPMENT

Represents the total new and used capital expenditures reported by establishments in operation and any known plants under construction.

These data include expenditures for:

1. Permanent additions and major alterations to manufacturing and mining establishments.
2. New and used machinery and equipment used for replacement and additions to plant capacity, if they are of the type for which depreciation, depletion, or (for mining establishments) Office of Minerals Exploration accounts are ordinarily maintained. In addition, for mining establishments, these data include expenditures made during the year for development and exploration of mineral properties. For manufacturing establishments, these data are broken down into three types.
 - a. Automobiles, trucks, etc. for highway use. These include vehicles acquired under a lease-purchase agreement and excludes vehicles leased or normally designed to transport materials, property, or equipment on mining, construction, petroleum development, and similar projects. These vehicles are of such size or weight as to be normally restricted by state laws or regulations from operating on public highways. It also excludes purchases of vehicles that are purchased by a company for highway use.
 - b. Computers and peripheral data processing equipment. This item include all purchases of computers and related equipment.
 - c. All other expenditures for machinery and equipment excluding automobiles and computer equipment.

Capital expenditures include work done by contract, as well as by the establishment's own workforce.

These data exclude expenditures for land and mineral rights and cost of maintenance and repairs charged as current operating expenses.

VALUE ADDED

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

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

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

VALUE OF SHIPMENTS

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

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

In addition to the value for NAICS defined products, aggregates of the following categories of miscellaneous receipts are reported as part of a total establishment’s value of product shipments: Reported contract work — receipts for work or services that a plant performed for others on their materials. Value of resales — sales of products brought and sold without further manufacture, processing, or assembly. 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: Primary products value of shipments. Secondary product value of shipments. 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 that 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 ratio

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 ratio have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in Tables 1 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

333512 MACHINE TOOL (METAL CUTTING TYPES) MANUFACTURING

This U.S. industry comprises establishments primarily engaged in manufacturing metal cutting machine tools (except handtools).

Appendix C.

Methodology

SOURCES OF THE DATA

The manufacturing sector includes approximately 350,000 establishments. This number includes those industries in the North American Industry Classification System (NAICS) definition of manufacturing. The amount of information requested from manufacturing establishments was 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).

Establishments in the 2002 Economic Census are divided into those sent report forms and those not sent report forms. The coverage of and the method of obtaining census information from each are described below:

1. Establishments sent a report form:

- 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-10000) 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 473 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 certain cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry, which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided

for the respondent to describe significant materials not listed on the form.

A wide variety of special inquiries were 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 “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 “not specified by kind” (nsk) categories.

2. Establishments not sent a report form:

- a. 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 the Census Bureau’s ability to assign the correct six-digit NAICS industry classification to the establishment. For each six-digit NAICS 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 that 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 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 NAICS group classification codes available in the files. For 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.

- b. All nonemployers, i.e., all firms subject to federal income tax, with no paid employees, during 2002 are excluded as in previous censuses. Data for nonemployers are not included in this report, but are released in the annual *Nonemployer Statistics* series.

The report forms used to collect information for establishments in this sector are available at help.econ.census.gov/econhelp/resources/.

A more detailed examination of census methodology is presented in the *History of the Economic Census* at www.census.gov/econ/www/history.html.

INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

The classifications for all establishments covered in the 2002 Economic Census — Manufacturing are classified in 1 of 473 industries in accordance with the industry definitions in the *North American Industry Classification System (NAICS), United States, 2002* manual. There were no changes between the 2002 edition and the 1997 edition affecting this sector. When applicable, Appendix F of this report shows the product class and product comparability between the two systems for data in this report.

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

The coding system works in such a way that the definitions progressively become narrower with successive additions of numerical digits. In the manufacturing sector for 2002, 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). Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are 1,450 product classes (seven-digit codes), 5,674 census products, and an additional 3,746 ten-digit product codes. The ten-digit products are considered the primary products of the industry with the same first six digits.

For the 2002 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 2002, 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 that 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 2002 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 2002, 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 2002 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 ASM sample is drawn for the second survey year after a census. The most recent sample was drawn for the 1999 survey year based on the 1997 Economic Census — Manufacturing. This sample will be in place through the 2003 ASM.

In 1997, there were approximately 370,000 individual manufacturing establishments. For sample efficiency and cost considerations, the establishments in the 1997 manufacturing population were partitioned into two components for developing estimates within the ASM. The details of each are described below:

1. 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 200,000 of the 370,000 establishments in the 1997 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 1999 survey, a new sample of approximately 58,000 individual establishments was selected from the mail stratum assembled from the 1997 census. Supplemental samples representing both 1998 and 1999 births (newly active establishments that were not included in the 1997 census) were also selected. Establishments selected for the sample are mailed an ASM survey questionnaire for each year through 2003.

The 1999-2003 ASM sample design is similar to the one used since 1984. Companies in the 1997 Economic Census — Manufacturing 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 1999-2003 sample, there are approximately 500 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. Across these 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 1997 Economic Census — Manufacturing.

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 1997 industry classification and its 1997 product class data. For each product class (1,755) and six-digit industry (473), 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 the Census Bureau's 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) that permits us to prevent small establishments from being selected in consecutive samples without introducing a bias into the survey estimates.

2. Nonmail stratum. The initial nonmail component of the survey was comprised of approximately 170,000 small, single-establishment companies that were tabulated as administrative records in the 1997 Economic Census — Manufacturing. 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.

RELIABILITY OF DATA

All data compiled in the economic census are subject to nonsampling errors. Nonsampling errors can be attributed to many sources during the development or execution of the census. The following are two ways that further explain this method: 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 1997 (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 1998-2002 ASM estimates, the 1997 Economic Census — Manufacturing values serve as the base year. For the 2003 ASM, the base will be updated to be the 2002 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 contained approximately 170,000 individual establishments in 1999, 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. ASM Data Qualifications. The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sample lists, but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the difference between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of estimates.

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

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

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

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

- From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.
- From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.
- From three standard errors below to three standard errors above the derived estimate for nearly all samples.

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

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

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

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

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 2002 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.

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 in a specific industry or geographic area is not considered a disclosure; therefore, this information may be released even though other information is withheld. Techniques employed to limit disclosure are discussed at www.census.gov/epcd/ec02/disclosure.htm.

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. Nonetheless, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for capital expenditures, which can be suppressed even though value of shipments data are published.

Appendix D. Geographic Notes

Not applicable for this report.

Appendix E. Metropolitan Areas and Micropolitan Statistical Areas

Not applicable for this report.

Appendix F. Comparability of Product Classes and Product Codes: 2002 to 1997

2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published
3331111	3331111	3331111	3331319	3331319	3331319	3332103YVW	3332103YVW	3332103YVW
333111100	333111100	333111000	333131901	333131901	333131901	3332105	3332105	3332105
3331114	3331113 pt	3331113 pt	333131906	333131906	333131906	3332105311	3332105211	3332105211
3331114100 pt	3331113110	3331113000 pt	333131911	333131911	333131911	3332105351 pt	3332105251 pt	3332105251
3331114100 pt	3331113YVW	3331113000 pt	3331319216	3331319216	3331319216	3332105351 pt	3332105251 pt	3332105231
3331117	3331117	3331117	3331319321	3331319321	3331319321	3332105351 pt	3332105251 pt	3332105241
3331117100	3331117100	3331117000	3331319426	3331319426	3331319426	3332105351 pt	3332105251 pt	3332105251
3331119	3331119	3331119	3331319531	3331319531	3331319531	3332105351 pt	3332105251 pt	3332105251
3331119100	3331119100	3331119000	3331319636	3331319636	3331319636	3332105351 pt	3332105251 pt	3332105251
333111A	333111A	333111A	3331319744	3331319744	3331319744	3332105YVW	3332105YVW	3332105YVW
333111A100	333111A100	333111A000	3331319YVW	3331319YVW	3331319YVW	333210W	333210W	333210W
333111C	333111C	333111C	333131WYVW	333131WYVW	333131WYVW	333210WYVW	333210WYVW	333210WYVW
333111C110	333111C110	333111C110	333131WYVW	333131WYVW	333131WYVW	3332201	3332201	3332201
333111C200	333111C200	333111C200	333131WYVW	333131WYVW	333131WYVW	3332201106	3332201106	3332201106
333111CYVW	333111CYVW	333111CYVW	3331321	3331321	3331321	3332201111	3332201111	3332201111
333111E	333111E	333111E	3331321101	3331321101	3331321101	3332201116	3332201116	3332201116
333111E100	333111E100	333111E000	3331321116	3331321116	3331321116	3332201121	3332201121	3332201121
333111G	333111G	333111G	3331321123 pt	3331321122 pt	3331321106	3332201201	3332201201	3332201201
333111G100	333111G100	333111G000	3331321123 pt	3331321122 pt	3331321111	3332201226	3332201226	3332201226
333111J	333111J	333111J	3331321126	3331321126	3331321126	3332201231	3332201231	3332201231
333111J100	333111J100	333111J000	3331321131	3331321131	3331321131	3332201236	3332201236	3332201236
333111W	333111W pt	333111W pt	3331321136	3331321136	3331321136	3332201341	3332201341	3332201341
333111WYVW	333111WYVW pt	333111WYVW pt	3331321151	3331321151	3331321151	3332201346	3332201346	3332201346
333111WYVW	333111WYVW pt	333111WYVW pt	3331321156	3331321156	3331321156	3332201351	3332201351	3332201351
3331121	3331121	3331121	3331321167 pt	3331321166 pt	3331321146	3332201356	3332201356	3332201356
3331121100	3331121100	3331121000	3331321167 pt	3331321166 pt	3331321166	3332201361	3332201361	3332201361
3331123	3331123	3331123	3331321271	3331321271	3331321271	3332201366	3332201366	3332201366
3331123100	3331123100	3331123000	3331321YVW	3331321YVW	3331321YVW	3332201371	3332201371	3332201371
3331127	3331127	3331127	3331323	3331323	3331323	3332201476	3332201476	3332201476
3331127100	3331127100	3331127000	3331323111	3331323111	3331323111	3332201481	3332201481	3332201481
333112W	333112W	333112W	3331323123 pt	3331323122 pt	3331323101	3332201486	3332201486	3332201486
333112WYVW	333112WYVW	333112WYVW	3331323123 pt	3331323122 pt	3331323106	3332201YVW	3332201YVW	3332201YVW
333112WYVW	333112WYVW	333112WYVW	3331323126	3331323126	3331323106	3332203	3332203	3332203
3331201	3331201	3331201	3331323226	3331323226	3331323226	333220301	333220301	333220301
3331201110	3331201110	3331201110	3331323YVW	3331323YVW	3331323YVW	3332203106	3332203106	3332203106
3331201220	3331201220	3331201220	3331325	3331325	3331325	3332203111	3332203111	3332203111
3331201330	3331201330	3331201330	3331325101	3331325106	3331325106	3332203116	3332203116	3332203116
3331201440	3331201440	3331201440	3331325111	3331325111	3331325111	3332203121	3332203121	3332203121
3331201550	3331201550	3331201550	3331325116	3331325116	3331325116	3332203126	3332203126	3332203126
3331201660	3331201660	3331201660	3331325121	3331325126	3331325126	3332203226	3332203226	3332203226
3331201770	3331201770	3331201770	3331325141	3331325146	3331325146	3332203YVW	3332203YVW	3332203YVW
3331201YVW	3331201YVW	3331201YVW	3331325146	3331325146	3331325146	333220W	333220W	333220W
3331208	3331208	3331208	3331325151	3331325151	3331325151	333220WYVW	333220WYVW	333220WYVW
3331208110	3331208110	3331208110	3331325156	3331325156	3331325156	333220WYVW	333220WYVW	333220WYVW
3331208115	3331208115	3331208115	3331325161	3331325161	3331325161	3332911	3332911	3332911
3331208126	3331208126	3331208126	3331325166	3331325166	3331325166	3332911104 pt	3332911106 pt	3332911101
3331208127	3331208127	3331208127	3331325171	3331325171	3331325171	3332911104 pt	3332911106 pt	3332911106
3331208135	3331208135	3331208135	3331327	3331327	3331327	3332911111	3332911111	3332911111
3331208144	3331208144	3331208144	3331327101	3331327101	3331327101	3332911121	3332911121	3332911121
3331208148	3331208148	3331208148	3331327210	3331327210	3331327210	3332911123 pt	3332911126 pt	3332911116
3331208152	3331208152	3331208152	3331327YVW	3331327YVW	3331327YVW	3332911123 pt	3332911126 pt	3332911126
3331208156	3331208156	3331208156	3331329	3331329	3331329	3332911131	3332911131	3332911131
3331208199	3331208199	3331208199	3331329108 pt	3331329108 pt	3331329101	3332911236	3332911236	3332911236
3331208YVW	3331208YVW	3331208YVW	3331329108 pt	3331329108 pt	3331329106	3332911241	3332911241	3332911241
3331209	3331209	3331209	3331329111	3331329111	3331329111	3332911346	3332911346	3332911346
3331209111	3331209111	3331209111	3331329YVW	3331329YVW	3331329YVW	3332911351	3332911351	3332911351
3331209245	3331209245	3331209245	333132W	333132W	333132W	3332911361	3332911361	3332911361
3331209352	3331209352	3331209352	333132WYVW	333132WYVW	333132WYVW	3332911456	3332911456	3332911456
3331209353	3331209353	3331209353	333132WYVW	333132WYVW	333132WYVW	3332911566	3332911566	3332911566
3331209366	3331209366	3331209366	3332103	3332103	3332103	3332911571	3332911571	3332911571
3331209377	3331209377	3331209377	33321030101	33321030101	33321030101	3332911576	3332911576	3332911576
3331209388	3331209388	3331209388	3332103106	3332103106	3332103106	3332911581	3332911581	3332911581
3331209YVW	3331209YVW	3331209YVW	3332103111	3332103111	3332103111	3332911591	3332911591	3332911591
333120W	333120W	333120W	3332103116	3332103116	3332103116	3332911597 pt	3332911596 pt	3332911586
333120WYVW	333120WYVW	333120WYVW	3332103121	3332103121	3332103121	3332911597 pt	3332911596 pt	3332911596
333120WYVW	333120WYVW	333120WYVW	3332103126	3332103126	3332103126	3332911YVW	3332911YVW	3332911YVW
3331311	3331311	3331311	3332103231	3332103231	3332103231	3332913	3332913	3332913
3331311100	3331311100	3331311000	3332103236	3332103236	3332103236	3332913101	3332913101	3332913101
3331313	3331313	3331313	3332103241	3332103241	3332103241	3332913211	3332913211	3332913211
3331313100	3331313100	3331313100	3332103246	3332103246	3332103246	3332913321	3332913321	3332913321
3331315	3331315	3331315	3332103251	3332103251	3332103251	3332913431	3332913431	3332913431
3331315100	3331315100	3331315000	3332103256	3332103256	3332103256	3332913541	3332913541	3332913541
3331317	3331317	3331317	3332103261	3332103261	3332103261	3332913YVW	3332913YVW	3332913YVW
3331317100	3331317100	3331317000	3332103266	3332103266	3332103266	333291W	333291W	333291W
			3332103271	3332103271	3332103271	333291WYVW	333291WYVW	333291WYVW
			3332103276	3332103276	3332103276	333291WYVW	333291WYVW	333291WYVW
			3332103292 pt	3332103291 pt	3332103279	3332921	3332921	3332921
			3332103292 pt	3332103291 pt	3332103283	3332921101	3332921101	3332921101
			3332103292 pt	3332103291 pt	3332103287	3332921103	3332921103	3332921103
			3332103292 pt	3332103291 pt	3332103291	3332921106	3332921106	3332921106
			3332103396	3332103396	3332103396	3332921111	3332921111	3332921111
						3332921116	3332921116	3332921116
						3332921121	3332921121	3332921121
						3332921131	3332921131	3332921131

2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published
3332921136	3332921136	3332921136	3332945	3332945	3332945	3332987216	3332987216	3332987216
3332921241	3332921241	3332921241	3332945101	3332945101	3332945101	3332987226	3332987226	3332987226
3332921246	3332921246	3332921246	3332945111	3332945111	3332945111	3332987236	3332987236	3332987236
3332921358 pt	3332921358 pt	3332921351	3332945116	3332945116	3332945116	3332987266	3332987266	3332987266
3332921358 pt	3332921358 pt	3332921356	3332945121	3332945121	3332945121	3332987276	3332987276	3332987276
3332921461	3332921461	3332921461	3332945131	3332945131	3332945131	3332987291	3332987291	3332987291
3332921462	3332921462	3332921462	3332945135	3332945135	3332945135	33329872A1	33329872A1	33329872A1
3332921476	3332921476	3332921476	3332945141	3332945141	3332945141	33329872B1	33329872B1	33329872B1
3332921566	3332921566	3332921566	3332945151	3332945151	3332945151	33329872C1	33329872C1	33329872C1
3332921571	3332921571	3332921571	3332945161	3332945161	3332945161	33329872D6	33329872D6	33329872D6
3332921681	3332921681	3332921681	3332945206	3332945206	3332945206			
3332921686	3332921686	3332921686	3332945208	3332945208	3332945208	33329872F6	33329872F6	33329872F6
3332921691	3332921691	3332921691	3332945371	3332945371	3332945371	33329872J6	33329872J6	33329872J6
3332921YVW	3332921YVW	3332921YVW	3332945376	3332945376	3332945376	33329872P6	33329872P6	33329872P6
			3332945381	3332945381	3332945381	33329873D1	33329873D1	33329873D1
3332923	3332923	3332923	3332945392 pt	3332945391 pt	3332945386	33329873E1	33329873E1	33329873E6
3332923101	3332923101	3332923101	3332945392 pt	3332945391 pt	3332945391	33329873F1	33329873F1	33329873F6
3332923106	3332923106	3332923106	3332945YVW	3332945YVW	3332945YVW	33329873G1	33329873G1	33329873G6
3332923111	3332923111	3332923111				33329874A6	33329874A6	33329874A6
3332923216	3332923216	3332923216	3332945381	3332945381	3332945381	33329875R1	33329875R1	33329875R1
3332923321	3332923321	3332923321	3332945386	3332945386	3332945386	3332987YVW	3332987YVW	3332987YVW
3332923331	3332923331	3332923331	3332945391	3332945391	3332945391			
3332923336	3332923336	3332923336	3332945YVW	3332945YVW	3332945YVW			
3332923341	3332923341	3332923341				333298W	333298W	333298W
3332923346	3332923346	3332923346	3332950	3332950	3332950	333298WYVW	333298WYVW	333298WYVW
3332923451	3332923451	3332923451	3332950106	3332950106	3332950106	333298WYVW	333298WYVW	333298WYVW
			3332950211	3332950211	3332950211			
3332923456	3332923456	3332923456	3332950326	3332950326	3332950326	3333111	3333111	3333111
3332923561	3332923561	3332923561	3332950401	3332950401	3332950401	333311100	333311100	333311100
3332923566	3332923566	3332923566	3332950416	3332950416	3332950416			
3332923671	3332923671	3332923671	3332950421	3332950421	3332950421	3333113 pt	3333112	3333112
3332923681	3332923681	3332923681	3332950434 pt	3332950431 pt	3332950431	3333113 pt	333313G pt	333313G pt
3332923791	3332923791	3332923791	3332950434 pt	3332950431 pt	3332950436	3333113157 pt	3333112157 pt	3333112157
3332923YVW	3332923YVW	3332923YVW	3332950441	3332950441	3332950441	3333113157 pt	3333112157 pt	3333112159
			3332950446	3332950446	3332950446	3333113269	333311269	333311269
						3333113271	333313G120	333313G000 pt
333292W	333292W	333292W	3332950451	3332950451	3332950451	3333113YVW	3333112YVW	3333112YVW
333292WYVW	333292WYVW	333292WYVW	3332950456	3332950456	3332950456			
333292WYVW	333292WYVW	333292WYVW	3332950461	3332950461	3332950461			
			3332950468 pt	3332950468 pt	3332950466	3333114	3333134	3333134
			3332950468 pt	3332950468 pt	3332950471	3333114101	3333134110	3333134000 pt
3332931	3332931	3332931	3332950468 pt	3332950468 pt	3332950476	3333114105	3333134120	3333134000 pt
3332931101	3332931101	3332931101	3332950581	3332950581	3332950581	3333114YVW	3333134YVW	3333134000 pt
3332931111	3332931111	3332931111	3332950586	3332950586	3332950586			
3332931221	3332931221	3332931221	3332950591	3332950591	3332950591	333311W	333311W	333311W
3332931331	3332931331	3332931331	3332950596	3332950596	3332950596	333311WYVW	333311WYVW	333311WYVW
3332931351	3332931351	3332931351				333311WYVW	333311WYVW	333311WYVW
3332931441	3332931441	3332931441	33329505A1	33329505A1	33329505A1			
3332931YVW	3332931YVW	3332931YVW	33329505A6	33329505A6	33329505A6	3333120	3333120	3333120
			33329505B1	33329505B1	33329505B1	3333120101	3333120101	3333120101
			33329505B6	33329505B6	33329505B6	3333120211	3333120211	3333120211
			3332950YVW	3332950YVW	3332950YVW	3333120231	3333120231	3333120231
			3332950YVW	3332950YVW	3332950YVW	3333120241	3333120241	3333120241
						3333120351	3333120351	3333120351
			3332981	3332981	3332981	3333120361	3333120361	3333120361
			3332981121	3332981121	3332981121	3333120366	3333120366	3333120366
			3332981201	3332981201	3332981201	3333120471	3333120471	3333120471
			3332981206	3332981206	3332981206	3333120491	3333120491	3333120491
			3332981211	3332981211	3332981211	3333120577	3333120577	3333120577
			3332981216	3332981216	3332981216	3333120581	3333120581	3333120581
			3332981226	3332981226	3332981226	3333120586	3333120586	3333120586
			3332981331	3332981331	3332981331	3333120YVW	3333120YVW	3333120YVW
			3332981336	3332981336	3332981336	3333120YVW	3333120YVW	3333120YVW
			3332981YVW	3332981YVW	3332981YVW			
						3333131	3333131	3333131
			3332983	3332983	3332983	333313100	333313100	333313100
			3332983101	3332983101	3332983101			
			3332983106	3332983106	3332983106	3333137	3333137	3333137
			3332983111	3332983111	3332983111	3333137100	3333137100	3333137000
			3332983116	3332983116	3332983116			
			3332983121	3332983121	3332983121	333313A	333313A	333313A
			3332983226	3332983226	3332983226	333313A100	333313A100	333313A000
			3332983231	3332983231	3332983231			
			3332983YVW	3332983YVW	3332983YVW	333313E pt	333313E pt	333313D pt
						333313E pt	3399427 pt	3399425 pt
			3332985	3332985	3332985	333313E100 pt	333313E121	333313D000 pt
			3332985106	3332985106	3332985106	333313E100 pt	333313EYVW pt	333313D000 pt
			3332985201	3332985201	3332985201	333313E100 pt	3399427YVW pt	3399425000 pt
			3332985211	3332985211	3332985211	333313E100 pt	3399427YVW pt	3399425000 pt
			3332985316	3332985316	3332985316			
			3332985YVW	3332985YVW	3332985YVW	333313H	333313G pt	333313G pt
						333313H100 pt	333313H10	333313G000 pt
						333313H100 pt	333313GYVW	333313G000 pt
			3332987	3332987	3332987	333313J	333313J	333313J
			3332987101	3332987101	3332987101	333313J100	333313J100	333313J000
			3332987106	3332987106	3332987106			
			3332987111	3332987111	3332987111	333313W pt	333313W pt	333313W pt
			3332987121	3332987121	3332987121			
			3332987131	3332987131	3332987131	333313W pt	339942W pt	339942W pt
			3332987141	3332987141	3332987141	333313WYVW pt	333313WYVW pt	333313WYVW pt
			3332987146	3332987146	3332987146	333313WYVW pt	339942WYVW pt	339942WYVW pt
			3332987151	3332987151	3332987151	333313WYVW pt	333313WYVW pt	333313WYVW pt
			3332987156	3332987156	3332987156	333313WYVW pt	339942WYVW pt	339942WYVW pt
			3332987161	3332987161	3332987161			
			3332987171	3332987171	3332987171	3333141	3333141	3333141
			3332987183 pt	3332987183 pt	3332987181	3333141100	3333141100	3333141000
			3332987183 pt	3332987183 pt	3332987186			
			3332987196	3332987196	3332987196	3333143	3333143	3333143
			33329871B6	33329871B6	33329871B6	3333143110	3333143110	3333143110
			33329871C6	33329871C6	33329871C6	3333143230	3333143230	3333143230
			33329871G9 pt	33329871G9 pt	33329871G6	3333143YVW	3333143YVW	3333143YVW
			33329871G9 pt	33329871G9 pt	33329871H1			
			33329871H9 pt	33329871H9 pt	33329871H6	333314W	333314W	333314W
			33329871H9 pt	33329871H9 pt	33329871J1	333314WYVW	333314WYVW	333314WYVW
			33329871K1	33329871K1	33329871K1	3333151	3333151	3333151
			33329871K6	33329871K6	33329871K6	3333151101	3333151101	3333151101
			33329871M1	33329871M1	33329871M1	3333151206	3333151206	3333151206
			33329871M6	33329871M6	33329871M6	3333151311	3333151311	3333151311
			33329871N1	33329871N1	33329871N1	3333151416	3333151416	3333151416
			33329871N6	33329871N6	33329871N6	3333151521	3333151521	3333151521
			33329871P1	33329871P1	33329871P1	3333151YVW	3333151YVW	3333151YVW
	</							

2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published
3333155	3333155	3333155	3334120327	3334120327	3334120327	3334159YVW	3334159YVW	3334159YVW
3333155101	3333155101	3333155101	3334120329	3334120329	3334120329	333415A	333415A	333415A
3333155106	3333155106	3333155106	3334120344	3334120344	3334120344	333415A100	333415A100	333415A000
3333155111	3333155111	3333155111	3334120463	3334120463	3334120463	333415C	333415C	333415C
3333155116	3333155116	3333155116	3334120465	3334120465	3334120465	333415C100	333415C100	333415C000
3333155221	3333155221	3333155221	3334120573	3334120573	3334120573	333415D	333415D	333415D
3333155YVW	3333155YVW	3333155YVW	3334120575	3334120575	3334120575	333415D101	333415D101	333415D101
3333157	3333157	3333157	3334120688	3334120688	3334120688	333415D111	333415D111	333415D111
3333157101	3333157101	3333157101	3334120YVW	3334120YVW	3334120YVW	333415D121	333415D121	333415D121
3333157206	3333157206	3333157206	3334120YWY	3334120YWY	3334120YWY	333415D131	333415D131	333415D131
3333157311	3333157311	3333157311	3334141	3334141	3334141	333415D141	333415D141	333415D141
3333157YVW	3333157YVW	3333157YVW	3334141101	3334141101	3334141101	333415D151	333415D151	333415D151
333315W	333315W	333315W	3334141106	3334141106	3334141106	333415D161	333415D161	333415D161
333315WYVW	333315WYVW	333315WYVW	3334141111	3334141111	3334141111	333415D171	333415D171	333415D171
333315WYVY	333315WYVY	333315WYVY	3334141116	3334141116	3334141116	333415D181	333415D181	333415D181
3333191	3333191	3333191	3334141YVW	3334141YVW	3334141YVW	333415DYVW	333415DYVW	333415DYVW
3333191111	3333191111	3333191111	3334143	3334143	3334143	333415E	333415E	333415E
3333191116	3333191116	3333191116	3334143101	3334143101	3334143101	333415E100	333415E100	333415E000
3333191121	3333191121	3333191121	3334143106	3334143106	3334143106	333415F	333415F	333415F
3333191131	3333191131	3333191131	3334143111	3334143111	3334143111	333415F100	333415F100	333415F000
3333191241	3333191241	3333191241	3334143116	3334143116	3334143116	333415G	333415G	333415G
3333191251	3333191251	3333191251	3334143121	3334143121	3334143121	333415G100	333415G100	333415G000
3333191261	3333191261	3333191261	3334143126	3334143126	3334143126	333415W pt.	332322W pt.	332322W pt.
3333191271	3333191271	3333191271	3334143131	3334143131	3334143131	333415W pt.	333414W pt.	333414W pt.
3333191281	3333191281	3333191281	3334143136	3334143136	3334143136	333415W pt.	333415W pt.	333415W pt.
3333191391	3333191391	3333191391	3334143141	3334143141	3334143141	333415WYVW pt.	333415WYVW pt.	333415WYVW pt.
3333191YVW	3333191YVW	3333191YVW	3334143146	3334143146	3334143146	333415WYVY pt.	333415WYVY pt.	333415WYVY pt.
3333193	3333193	3333193	3334143151	3334143151	3334143151	333415WYVY pt.	333415WYVY pt.	333415WYVY pt.
3333193101	3333193101	3333193101	3334143YVW	3334143YVW	3334143YVW	3335110	3335110	3335110
3333193111	3333193111	3333193111	3334145	3334145	3334145	3335110101	3335110101	3335110101
3333193221	3333193221	3333193221	3334145101	3334145101	3334145101	3335110106	3335110106	3335110106
3333193YVW	3333193YVW	3333193YVW	3334145111	3334145111	3334145111	3335110411	3335110411	3335110411
3333195	3333195	3333195	3334145YVW	3334145YVW	3334145YVW	3335110416	3335110416	3335110416
3333195101	3333195101	3333195101	3334147	3334147	3334147	3335110421	3335110421	3335110421
3333195106	3333195106	3333195106	3334147101	3334147101	3334147101	3335110426	3335110426	3335110426
3333195111	3333195111	3333195111	3334147106	3334147106	3334147106	3335110431	3335110431	3335110431
3333195116	3333195116	3333195116	3334147111	3334147111	3334147111	3335110436	3335110436	3335110436
3333195121	3333195121	3333195121	3334147116	3334147116	3334147116	3335110441	3335110441	3335110441
3333195126	3333195126	3333195126	3334147121	3334147121	3334147121	3335110446	3335110446	3335110446
3333195231	3333195231	3333195231	3334147126	3334147126	3334147126	3335110451	3335110451	3335110451
3333195YVW	3333195YVW	3333195YVW	3334147YVW	3334147YVW	3334147YVW	3335110476	3335110476	3335110476
3333197	3333197	3333197	333414A pt.	333414A pt.	333414A pt.	3335110541	3335110541	3335110541
3333197100	3333197100	3333197000	333414A pt.	33339998 pt.	33339998 pt.	3335110546	3335110546	3335110546
333319A pt.	3333199	3333199	333414A101	3334149101	3334149101	3335110551	3335110551	3335110551
333319A pt.	339999K pt.	339999H pt.	333414A106	3334149106	3334149106	3335110556	3335110556	3335110556
333319A101	3333199101	3333199101	333414A111	3334149111	3334149111	3335110558	3335110558	3335110558
333319A106	3333199106	3333199106	333414A121	3334149121	3334149121	3335110560	3335110560	3335110560
333319A111	3333199111	3333199111	333414A126	3334149126	3334149126	3335110YVW	3335110YVW	3335110YVW
333319A116	3333199116	3333199116	333414A131	3334149131	3334149131	3335110YWY	3335110YWY	3335110YWY
333319A146	3333199146	3333199146	333414A136	3334149136	3334149136	3335121	3335121	3335121
333319A151	3333199151	3333199151	333414A138	3333999893	3333999895 pt.	333512100 pt.	3335121100 pt.	3335121100
333319A161	3333199161	3333199161	333414A140	3334149140	3334149140	3335121200	3335122100	3335122000
333319A166	3333199166	3333199166	333414A150	3334149150	3334149150	3335123	3335123	3335123
333319A171	3333199171	3333199171	333414A151	3334149151	3334149151	3335123100	3335123100	3335123000
333319A174	3333199174	3333199174	333414AYVW pt.	3334149YVW pt.	3334149YVW pt.	3335124	3335124	3335124
333319A178	3333199178	3333199178	333414AYVW pt.	33339998YVW pt.	33339998YVW pt.	3335124100	3335124100	3335124000
333319A182	3333199182	3333199182	333414W pt.	333414W pt.	333414W pt.	3335125	3335125	3335125
333319A186	3333199186	3333199186	333414W pt.	3333999W pt.	3333999W pt.	3335125101	3335125101	3335125101
333319A189	3333199189	3333199189	333414WYVW pt.	333414WYVW pt.	333414WYVW pt.	3335125106	3335125106	3335125106
333319A191	339999K106	339999H106	333414WYVY pt.	3333999WYVW pt.	3333999WYVW pt.	3335125116	3335125116	3335125116
333319A194	3333199194	3333199194	333414WYVY pt.	333414WYVY pt.	333414WYVY pt.	3335125198 pt.	3335125198 pt.	3335125111
333319A196	3333199196	3333199196	333414WYVY pt.	3333999WYVY pt.	3333999WYVY pt.	3335125199 pt.	3335125199 pt.	3335125199
333319A221	3333199221	3333199221	3334152 pt.	332322E pt.	332322E pt.	3335125YVW	3335125YVW	3335125YVW
333319A236	3333199236	3333199236	3334152 pt.	3334149 pt.	3334149 pt.	3335126	3335126	3335126
333319A256	3333199256	3333199256	3334152 pt.	3334149 pt.	3334149 pt.	3335126101	3335126101	3335126101
333319A299	3333199299	3333199299	3334152 pt.	3334149 pt.	3334149 pt.	3335126107	3335126107	3335126106 pt.
333319A301	3333199301	3333199301	3334152 pt.	3334149 pt.	3334149 pt.	3335126111	3335126111	3335126106 pt.
333319A326	3333199326	3333199326	3334152 pt.	3334149 pt.	3334149 pt.	3335126YVW	3335126YVW	3335126YVW
333319A331	3333199331	3333199331	3334152100 pt.	33219990185	33219990191 pt.	3335127	3335127	3335127
333319A341	3333199341	3333199341	3334152100 pt.	33219990YVW pt.	33219990YVW pt.	3335127100	3335127100	3335127000
333319AYVW pt.	3333199YVW	3333199YVW	3334152100 pt.	33219990YVW pt.	33219990YVW pt.	3335128	3335128	3335128
333319AYVW pt.	339999KYVW pt.	339999HYVW pt.	3334152100 pt.	332322E109	332322E106 pt.	3335128100	3335128100	3335128000
333319W pt.	333319W	333319W	3334152100 pt.	332322EYVW pt.	332322EYVW pt.	3335129	3335129	3335129
333319W pt.	333319W	333319W	3334152100 pt.	3334149153	3334149YVW pt.	3335129100	3335129100	3335129000
333319WYVW pt.	333319WYVW	333319WYVW	3334152100 pt.	3334149YVW pt.	3334149YVW pt.	333512A	333512A	333512A
333319WYVW pt.	339999WYVW pt.	339999WYVW pt.	3334152100 pt.	3334151100	3334151000	333512A100 pt.	333512A100 pt.	333512A100
333319WYVY pt.	333319WYVY	333319WYVY	3334153	3334153	3334153	333512A100 pt.	333512A100 pt.	333512AYVW
333319WYVY pt.	339999WYVY pt.	339999WYVY pt.	3334153101	3334153101	3334153101	333512YVW	333512YVW	333512YVW
3334111	3334111	3334111	3334153106	3334153106	3334153106	3335131	3335131	3335131
3334111110	3334111110	3334111110	3334153111	3334153111	3334153111	3335131100	3335131100	3335131000
3334111165	3334111165	3334111165	3334153116	3334153116	3334153116	3335133	3335133	3335133
3334111YVW	3334111YVW	3334111YVW	3334153121	3334153121	3334153121	3335133100	3335133100	3335133000
3334113	3334113	3334113	3334153126	3334153126	3334153126	3335135	3335135	3335135
3334113103	3334113103	3334113103	3334153131	3334153131	3334153131	3335135100	3335135100	3335135000
3334113207	3334113207	3334113207	3334153136	3334153136	3334153136	3335135 pt.	3335135 pt.	3335135 pt.
3334113211	3334113211	3334113211	3334153141	3334153141	3334153141	3335135 pt.	3335135 pt.	3335135 pt.
3334113231	3334113231	3334113231	3334153146	3334153146	3334153146	3335135 pt.	3335135 pt.	3335135 pt.
3334113355	3334113355	3334113355	3334153151	3334153151	3334153151	3335135 pt.	3335135 pt.	3335135 pt.
3334113YVW	3334113YVW	3334113YVW	3334153156	3334153156	3334153156	3335135 pt.	3335135 pt.	3335135 pt.
333411W	333411W	333411W	3334153191	3334153191	3334153191	3335135 pt.	3335135 pt.	3335135 pt.
333411WYVW								

2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published
3335137	3335137	3335137	3335163	3335163	3335163	3336133444	3336133444	3336133444
3335137101	3335137101	3335137101	3335163101	3335163101	3335163101	3336133545	3336133545	3336133545
3335137111	3335137111	3335137111	3335163106	3335163106	3335163106	3336133648	3336133648	3336133648
3335137117	3335137117	3335137116 pt	3335163191	3335163191	3335163191	3336133649	3336133649	3336133649
3335137121	3335137121	3335137116 pt	3335163YVW	3335163YVW	3335163YVW	3336133756	3336133756	3336133756
3335137YVW	3335137YVW	3335137YVW	3335165	3335165	3335165	3336133763	3336133763	3336133763
333513W	333513W	333513W	3335165101	3335165101	3335165101	3336133767	3336133767	3336133767
333513WYVW	333513WYVW	333513WYVW	3335165106	3335165106	3335165106	3336133788	3336133788	3336133788
333513WYVW	333513WYVW	333513WYVW	3335165111	3335165111	3335165111	3336133792	3336133792	3336133792
3335140	3335140	3335140	3335165116	3335165116	3335165116	3336133798	3336133798	3336133798
3335140101	3335140101	3335140101	3335165121	3335165121	3335165121	3336133YVW	3336133YVW	3336133YVW
3335140103	3335140103	3335140103	3335165YVW	3335165YVW	3335165YVW	333613W	333613W	333613W
3335140106	3335140106	3335140106	333516W	333516W	333516W	333613WYVW	333613WYVW	333613WYVW
3335140109	3335140109	3335140109	333516WYVW	333516WYVW	333516WYVW	333613WYVW	333613WYVW	333613WYVW
3335140112	3335140112	3335140112	333516WYVW	333516WYVW	333516WYVW	3336181	3336181	3336181
3335140215	3335140215	3335140215	3335181	3335181	3335181	3336181100	3336181100	3336181100
3335140318	3335140318	3335140318	3335181101	3335181101	3335181101	3336183	3336183	3336183
3335140321	3335140321	3335140321	3335181206	3335181206	3335181206	3336183100	3336183100	3336183000
3335140326	3335140326	3335140326	3335181311	3335181311	3335181311	3336185	3336185	3336185
3335140332	3335140332	3335140332	3335181416	3335181416	3335181416	3336185100	3336185100	3336185000
3335140423	3335140423	3335140423	3335181521	3335181521	3335181521	3336189	3336189	3336189
3335140429	3335140429	3335140429	3335181YVW	3335181YVW	3335181YVW	3336189100	3336189100	3336189000
3335140535	3335140535	3335140535	3335183	3335183	3335183	333618B pt	333618B pt	3336187
3335140538	3335140538	3335140538	3335183101	3335183101	3335183101	333618B pt	333618B pt	333618A
3335140541	3335140541	3335140541	3335183106	3335183106	3335183106	333618B pt	333618B pt	333618W pt
3335140543	3335140543	3335140543	3335183111	3335183111	3335183111	333618B101	333618B101	333618A101
3335140546	3335140546	3335140546	3335183116	3335183116	3335183116	333618B106	333618B106	333618A106
3335140549	3335140549	3335140549	3335183121	3335183121	3335183121	333618B108	333618B108	3336187100
3335140652	3335140652	3335140652	3335183126	3335183126	3335183126	333618B110	333618B110	333618WYVW pt
3335140655	3335140655	3335140655	3335183131	3335183131	3335183131	333618BYVW	333618BYVW	333618A
3335140658	3335140658	3335140658	3335183YVW	3335183YVW	3335183YVW	333618F	333618F	333618F
3335140661	3335140661	3335140661	333518W	333518W	333518W	333618F101	333618F101	333618F101
3335140663	3335140663	3335140663	333518WYVW	333518WYVW	333518WYVW	333618F106	333618F106	333618F106
3335140666	3335140666	3335140666	333518WYVW	333518WYVW	333518WYVW	333618F111	333618F111	333618F111
3335140769	3335140769	3335140769	3336110	3336110	3336110	333618F116	333618F116	333618F116
3335140772	3335140772	3335140772	3336110101	3336110101	3336110101	333618F121	333618F121	333618F121
3335140775	3335140775	3335140775	3336110211	3336110211	3336110211	333618F126	333618F126	333618F126
3335140878	3335140878	3335140878	3336110211	3336110211	3336110211	333618F131	333618F131	333618F131
3335140981	3335140981	3335140981	3336110741	3336110741	3336110741	333618F136	333618F136	333618F136
3335140YVW	3335140YVW	3335140YVW	3336110746	3336110746	3336110746	333618F141	333618F141	333618F141
3335140YVW	3335140YVW	3335140YVW	3336110761	3336110761	3336110761	333618F146	333618F146	333618F146
3335151	3335151	3335151	3336110766	3336110766	3336110766	333618F151	333618F151	333618F151
3335151102	3335151102	3335151102	3336110776 pt	3336110776 pt	3336110776 pt	333618F156	333618F156	333618F156
3335151124	3335151124	3335151124	3336110776 pt	3336110776 pt	3336110776 pt	333618F161	333618F161	333618F161
3335151126	3335151126	3335151126	3336110836	3336110836	3336110836	333618F166	333618F166	333618F166
3335151128	3335151128	3335151128	3336110856	3336110856	3336110856	333618F171	333618F171	333618F171
3335151132	3335151132	3335151132	3336110871	3336110871	3336110871	333618F176	333618F176	333618F176
3335151148	3335151148	3335151148	3336110951	3336110951	3336110951	333618F186	333618F186	333618F186
3335151152	3335151152	3335151152	3336110YVW	3336110YVW	3336110YVW	333618F196	333618F196	333618F196
3335151188	3335151188	3335151188	3336110YVW	3336110YVW	3336110YVW	333618F199	333618F199	333618F199
3335151204	3335151204	3335151204	33361123	33361123	33361123	333618F211	333618F211	333618F211
3335151206	3335151206	3335151206	3336123111	3336123111	3336123111	333618F228	333618F228	333618F228
3335151308	3335151308	3335151308	3336123116	3336123116	3336123116	333618FYVW	333618FYVW	333618FYVW
3335151312	3335151312	3335151312	3336123116	3336123116	3336123116	333618W	333618W	333618W pt
3335151314	3335151314	3335151314	3336123125	3336123125	3336123125	333618WYVW	333618WYVW	333618WYVW pt
3335151316	3335151316	3335151316	3336123135	3336123135	3336123135	333618WYVW	333618WYVW	333618WYVW pt
3335151318	3335151318	3335151318	3336123146	3336123146	3336123146	3339111	3339111	3339111
3335151322	3335151322	3335151322	3336123155	3336123155	3336123155	333911110	333911110	333911110
3335151434	3335151434	3335151434	3336123157	3336123157	3336123157	333911120	333911120	333911120
3335151436	3335151436	3335151436	3336123YVW	3336123YVW	3336123YVW	333911130	333911130	333911130
3335151438	3335151438	3335151438	3336127	3336127	3336127	333911140	333911140	333911140
3335151442	3335151442	3335151442	3336127114	3336127114	3336127114	3339111440	3339111440	3339111440
3335151444	3335151444	3335151444	3336127116	3336127116	3336127116	3339111590	3339111590	3339111590
3335151446	3335151446	3335151446	3336127118	3336127118	3336127118	3339111YVW	3339111YVW	3339111YVW
3335151554	3335151554	3335151554	3336127121	3336127121	3336127121	3339115	3339115	3339115
3335151558	3335151558	3335151558	3336127225	3336127225	3336127225	3339115105	3339115105	3339115105
3335151562	3335151562	3335151562	3336127226	3336127226	3336127226	3339115133	3339115133	3339115133
3335151564	3335151564	3335151564	3336127329	3336127329	3336127329	3339115YVW	3339115YVW	3339115YVW
3335151568	3335151568	3335151568	3336127437	3336127437	3336127437	333911W	333911W	333911W
3335151572	3335151572	3335151572	3336127438	3336127438	3336127438	333911WYVW	333911WYVW	333911WYVW
3335151574	3335151574	3335151574	3336127441	3336127441	3336127441	333911WYVW	333911WYVW	333911WYVW
3335151576	3335151576	3335151576	3336127443	3336127443	3336127443	333911WYVW	333911WYVW	333911WYVW
3335151578	3335151578	3335151578	3336127445	3336127445	3336127445	333911WYVW	333911WYVW	333911WYVW
3335151582	3335151582	3335151582	3336127447	3336127447	3336127447	333911WYVW	333911WYVW	333911WYVW
3335151584	3335151584	3335151584	333612744G	333612744G	333612744G	333911WYVW	333911WYVW	333911WYVW
3335151586	3335151586	3335151586	333612744R	333612744R	333612744R	333911WYVW	333911WYVW	333911WYVW
3335151592	3335151592	3335151592	3336127553	3336127553	3336127553	3339121	3339121	3339121
3335151596	3335151596	3335151596	3336127555	3336127555	3336127555	3339121110	3339121110	3339121110
3335151656	3335151656	3335151656	3336127559	3336127559	3336127559	3339121220	3339121220	3339121220
3335151766	3335151766	3335151766	3336127666	3336127666	3336127666	3339121YVW	3339121YVW	3339121YVW
3335151YVW	3335151YVW	3335151YVW	3336127771	3336127771	3336127771	3339125	3339125	3339125
3335153	3335153	3335153	3336127773	3336127773	3336127773	3339125100	3339125100	3339125100
3335153101	3335153101	3335153101	3336127776	3336127776	3336127776	3339127	3339127	3339127
3335153106	3335153106	3335153106	3336127879	3336127879	3336127879	3339127131	3339127131	3339127131
3335153111	3335153111	3335153111	3336127983	3336127983	3336127983	3339127151	3339127151	3339127151
3335153116	3335153116	3335153116	3336127A88	3336127A88	3336127A88	3339127199	3339127199	3339127199
3335153121	3335153121	3335153121	3336127B99	3336127B99	3336127B99	3339127YVW	3339127YVW	3339127YVW
3335153126	3335153126	3335153126	3336127YVW	3336127YVW	3336127YVW	333912W	333912W	333912W
3335153131	3335153131	3335153131	333612W	333612W	333612W	333912WYVW	333912WYVW	333912WYVW
3335153136	3335153136	3335153136	333612WYVW					

2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published
3339211	3339211	3339211	333923W	333923W	333923W	3339921	3339921	3339921
3339211101	3339211101	3339211101	333923WYWW	333923WYWW	333923WYWW	3339921101	3339921101	3339921101
3339211106	3339211106	3339211106	333923WYWY	333923WYWY	333923WYWY	3339921106	3339921106	3339921106
3339211211	3339211211	3339211211				3339921111	3339921111	3339921111
3339211316	3339211316	3339211316	3339242 pt.	332618C pt.	332618B pt	3339921126	3339921126	3339921126
3339211321	3339211321	3339211321				3339921131	3339921131	3339921131
3339211326	3339211326	3339211326	3339242 pt.	3339241	3339241	3339921136	3339921136	3339921136
3339211331	3339211331	3339211331	3339242101	3339241101	3339241101	3339921141	3339921141	3339921141
3339211336	3339211336	3339211336	3339242104	3339241104	3339241104	3339921146	3339921146	3339921146
3339211YVW	3339211YVW	3339211YVW	3339242208	3339241208	3339241208	3339921151	3339921151	3339921151
			3339242212	3339241212	3339241212	3339921156	3339921156	3339921156
3339213	3339213	3339213	3339242216	3339241216	3339241216	3339921161	3339921161	3339921161
3339213101	3339213101	3339213101	3339242321	3339241321	3339241321	3339921YVW	3339921YVW	3339921YVW
3339213106	3339213106	3339213106	3339242424	3339241424	3339241424			
3339213YVW	3339213YVW	3339213YVW	3339242528	3339241528	3339241528	3339923	3339923	3339923
			3339242532	3339241532	3339241532	3339923101	3339923101	3339923101
333921W	333921W	333921W	3339242536	3339241536	3339241536	3339923106	3339923106	3339923106
333921WYWW	333921WYWW	333921WYWW				3339923111	3339923111	3339923111
333921WYVW	333921WYVW	333921WYVW	3339242544	3339241544	3339241544	3339923116	3339923116	3339923116
			3339242548	3339241548	3339241548	3339923121	3339923121	3339923121
3339221	3339221	3339221	3339242552	3339241552	3339241552	3339923126	3339923126	3339923126
3339221101	3339221101	3339221101	3339242556	3339241556	3339241556	3339923131	3339923131	3339923131
3339221106	3339221106	3339221106	3339242561	3339241561	3339241561	3339923136	3339923136	3339923136
3339221311	3339221311	3339221311	3339242664	3339241664	3339241664	3339923141	3339923141	3339923141
3339221416	3339221416	3339221416	3339242668	3339241668	3339241668	3339923146	3339923146	3339923146
3339221421	3339221421	3339221421	3339242672	3339241672	3339241672	3339923151	3339923151	3339923151
3339221426	3339221426	3339221426	3339242676	3339241676	3339241676	3339923YVW	3339923YVW	3339923YVW
3339221431	3339221431	3339221431						
3339221436	3339221436	3339221436	3339242681	3339241681	3339241681	3339927	3339927	3339927
3339221441	3339221441	3339221441	3339242684	3339241684	3339241684	3339927101	3339927101	3339927101
3339221446	3339221446	3339221446	3339242688	3339241688	3339241688	3339927106	3339927106	3339927106
3339221451	3339221451	3339221451	3339242692	3339241692	3339241692	3339927111	3339927111	3339927111
3339221456	3339221456	3339221456	3339242696	3339241696	3339241696	3339927116	3339927116	3339927116
3339221461	3339221461	3339221461	3339242700	3339241700	3339241700	3339927121	3339927121	3339927121
3339221YVW	3339221YVW	3339221YVW	3339242704	3339241704	3339241704	3339927126	3339927126	3339927126
						3339927131	3339927131	3339927131
3339223	3339223	3339223	3339243	3339243	3339243	3339927YVW	3339927YVW	3339927YVW
3339223100	3339223100	3339223100	3339243101	3339243101	3339243101			
3339228 pt.	3331113 pt.	3331113 pt.	3339243106	3339243106	3339243106	3339929	3339929	3339929
			3339243111	3339243111	3339243111	3339929101	3339929101	3339929101
3339228 pt.	3339227 pt.	3339227 pt.	3339243YVW	3339243YVW	3339243YVW	3339929106	3339929106	3339929106
						3339929111	3339929111	3339929111
3339228 pt.	3339227 pt.	3339227 pt.	333924W pt.	332618W pt.	332618W pt	3339929116	3339929116	3339929116
3339228101	3339227101	3339227101				3339929121	3339929121	3339929121
3339228206	3339227206	3339227206	333924W pt.	333924W	333924W	3339929126	3339929126	3339929126
3339228211	3339227211	3339227211	333924WYWW pt.	332618WYWW pt.	332618WYWW pt	3339929YVW	3339929YVW	3339929YVW
3339228216	3339227216	3339227216	333924WYVW pt.	333924WYVW pt.	333924WYVW pt			
3339228221	3339227221	3339227221	333924WYVY pt.	332618WYVY pt.	332618WYVY pt	333992A	333992A	333992A
3339228226	3339227226	3339227226	333924WYVY pt.	332618WYVY pt.	332618WYVY pt	333992A101	333992A101	333992A101
3339228231	3339227231	3339227231				333992A116	333992A116	333992A116
3339228236	3339227236	3339227236	3339911	3339911	3339911	333992A121	333992A121	333992A121
3339228241	3339227241	3339227241	3339911101	3339911101	3339911101	333992A126	333992A126	333992A126
3339228246	3331113120	3331113000 pt	3339911106	3339911106	3339911106	333992A132 pt	333992A131 pt	333992A111
3339228251	3331113130	3331113000 pt	3339911111	3339911111	3339911111	333992A137 pt	333992A131 pt	333992A116
			3339911116	3339911116	3339911116	333992A141	333992A141	333992A141
3339228257 pt.	3339227257 pt.	3339227257 pt	3339911121	3339911121	3339911121	333992A146	333992A146	333992A146
3339228276	3339227276	3339227276	3339911126	3339911126	3339911126	333992AYVW	333992AYVW	333992AYVW
3339228281	3339227281	3339227281	3339911131	3339911131	3339911131			
3339228316	3339227316	3339227316	3339911136	3339911136	3339911136	333992W	333992W	333992W
3339228466	3339227466	3339227466	3339911141	3339911141	3339911141	333992WYVW	333992WYVW	333992WYVW
3339228469 pt.	3339227469 pt.	3339227469 pt	3339911146	3339911146	3339911146	333992WYVY	333992WYVY	333992WYVY
3339228469 pt.	3339227469 pt.	3339227471	3339911151	3339911151	3339911151			
3339228YVW	3339227YVW	3339227YVW	3339911156	3339911156	3339911156	3339931	3339931	3339931
			3339911YVW	3339911YVW	3339911YVW	3339931103	3339931103	3339931103
3339229	3339229	3339229	3339913	3339913	3339913	3339931207	3339931207	3339931207
3339229101	3339229101	3339229101	3339913101	3339913101	3339913101	3339931311	3339931311	3339931311
3339229106	3339229106	3339229106	3339913106	3339913106	3339913106	3339931315	3339931315	3339931315
3339229211	3339229211	3339229211	3339913111	3339913111	3339913111	3339931319	3339931319	3339931319
3339229YVW	3339229YVW	3339229YVW	3339913116	3339913116	3339913116	3339931321	3339931321	3339931321
			3339913YVW	3339913YVW	3339913YVW	3339931426	3339931426	3339931426
333922W pt.	333111W pt.	333111W pt				3339931433	3339931433	3339931433
333922W pt.	333922W pt.	333922W pt	3339917	3339917	3339917	3339931437	3339931437	3339931437
333922WYVW pt.	333111WYVW pt.	333111WYVW pt	3339917101	3339917101	3339917101	3339931544	3339931544	3339931544
333922WYVW pt.	333922WYVW pt.	333922WYVW pt	3339917106	3339917106	3339917106	3339931545	3339931545	3339931545
333922WYVY pt.	333111WYVY pt.	333111WYVY pt	3339917111	3339917111	3339917111	3339931651	3339931651	3339931651
333922WYVY pt.	333922WYVY pt.	333922WYVY pt	3339917116	3339917116	3339917116	3339931755	3339931755	3339931755
			3339917121	3339917121	3339917121	3339931859	3339931859	3339931859
3339231	3339231	3339231	3339917126	3339917126	3339917126	3339931963	3339931963	3339931963
3339231101	3339231101	3339231101	3339917YVW	3339917YVW	3339917YVW	3339931A67	3339931A67	3339931A67
3339231106	3339231106	3339231106				3339931A71	3339931A71	3339931A71
3339231111	3339231111	3339231111	3339919	3339919	3339919	3339931B75	3339931B75	3339931B75
3339231116	3339231116	3339231116	3339919101	3339919101	3339919101	3339931B79	3339931B79	3339931B79
3339231121	3339231121	3339231121	3339919104	3339919104	3339919104	3339931B83	3339931B83	3339931B83
3339231131	3339231131	3339231131	3339919108	3339919108	3339919108	3339931C99	3339931C99	3339931C99
3339231141	3339231141	3339231141	3339919112	3339919112	3339919112	3339931YVW	3339931YVW	3339931YVW
3339231146	3339231146	3339231146	3339919116	3339919116	3339919116			
3339231151	3339231151	3339231151	3339919121	3339919121	3339919121	3339935	3339935	3339935
3339231261	3339231261	3339231261	3339919124	3339919124	3339919124	3339935100	3339935100	3339935100
3339231YVW	3339231YVW	3339231YVW	3339					

2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published	2002 published	2002 collected	1997 published
3339953	3339953	3339953	3339971215	3339971215	3339971215	3339996100	3339996100	3339996000
3339953100	3339953100	3339953100	3339971313	3339971313	3339971313	3339997 pt	3329995 pt	3329994 pt
3339955	3339955	3339955	3339971YVW	3339971YVW	3339971YVW	3339997 pt	3329995 pt	3329994 pt
3339955100	3339955100	3339955100	3339973	3339973	3339973	3339997 pt	3329995 pt	3329994 pt
3339957	3339957	3339957	3339973102 pt	3339973102 pt	3339973101	3339997109	3339998109	3339998109
3339957100	3339957100	3339957100	3339973102 pt	3339973102 pt	3339973103	3339997218	3339998218	3339998218
333995W	333995W	333995W	3339973105	3339973105	3339973105	3339997321	3339998321	3339998321
333995WYWW	333995WYWW	333995WYWW	3339973107	3339973107	3339973107	3339997425	3339998425	3339998425
333995WYWY	333995WYWY	333995WYWY	3339973109	3339973109	3339973109	3339997436	3339998436	3339998436
3339961	3339961	3339961	3339973YVW	3339973YVW	3339973YVW	3339997446	3339998446	3339998446
3339961100	3339961100	3339961100	3339975	3339975	3339975	3339997451	3339998451	3339998451
3339963	3339963	3339963	3339975101	3339975101	3339975101	3339997556	3339998556	3339998556
3339963100	3339963100	3339963100	3339975103	3339975103	3339975103	3339997661	3339998661	3339998661
3339965	3339965	3339965	3339975105	3339975105	3339975105	3339997763	3339998763	3339998763
3339965100	3339965100	3339965100	3339975107	3339975107	3339975107	3339997870	3339998870	3339998870
3339967	3339967	3339967	3339975YVW	3339975YVW	3339975YVW	3339997880	3339998880	3339998880
3339967100	3339967100	3339967100	333997W	333997W	333997W	3339997983	3339998983	3339998983
3339969	3339969	3339969	333997WYWW	333997WYWW	333997WYWW	3339997986	3339998986	3339998986
3339969100	3339969100	3339969100	333997WYWY	333997WYWY	333997WYWY	3339997989	3339998989	3339998989
333996W	333996W	333996W	3339991	3339991	3339991	3339997994	3339998994	3339998994
333996WYWW	333996WYWW	333996WYWW	3339991104	3339991104	3339991104	3339997997	3329995121	3329994121
333996WYWY	333996WYWY	333996WYWY	3339991108	3339991108	3339991108	3339997998	3339998996	3339998996
3339971	3339971	3339971	3339991111	3339991111	3339991111	3339997YVW pt	3329995YVW pt	3329994YVW pt
3339971101	3339971101	3339971101	3339991212	3339991212	3339991212	3339997YVW pt	3329995YVW pt	3329994YVW pt
3339971103	3339971103	3339971103	3339991389	3339991389	3339991389	3339999A	3339999 pt	3339999 pt
3339971205	3339971205	3339971205	3339991YVW	3339991YVW	3339991YVW	3339999A100	3339999110	3339999100 pt
3339971207	3339971207	3339971207	3339993	3339993	3339993	3339999W pt	3329999W pt	3329999W pt
3339971209	3339971209	3339971209	3339993100	3339993100	3339993000	3339999W pt	3329999W pt	3329999W pt
3339971211	3339971211	3339971211	3339994	3339994	3339994	3339999W pt	3329999W pt	3329999W pt
			3339994100	3339994100	3339994000	3339999WYWW pt	3329999WYWW pt	3329999WYWW pt
			3339996	3339996	3339996	3339999WYWW pt	3329999WYWW pt	3329999WYWW pt
						3339999WYWY pt	3329999WYWY pt	3329999WYWY pt
						3339999WYWY pt	3329999WYWY pt	3329999WYWY pt

