

# 1992 Census of Manufactures

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MC92-I-33D

INDUSTRY SERIES

## Nonferrous Metal Mills and Miscellaneous Primary Metal Products

Industries 3351, 3353, 3354, 3355, 3356,  
3357, 3398, and 3399

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**U.S. Department of Commerce**  
**Ronald H. Brown**, Secretary  
**David J. Barram**, Deputy Secretary

**Economics and Statistics Administration**  
**Everett M. Ehrlich**, Under Secretary  
for Economic Affairs

**BUREAU OF THE CENSUS**  
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## Acknowledgments

Many persons participated in the various activities of the 1992 Census of Manufactures. The overall planning and review of the census operations were performed by the Economic Census Staff of the Economic Planning and Coordination Division.

Manufacturing and Construction Division prepared this report. **David W. Cartwright**, Assistant Chief for Census and Related Programs, was responsible for the overall planning, management, and coordination of the census of manufactures. Planning and implementation were under the direction of **Kenneth I. Hansen**, Chief, Metals and Industrial Machinery Branch, assisted by **Mendel D. Gayle**, Section Chief, with primary staff assistance by **Mary Ellickson**.

**Brian Greenberg**, Assistant Chief for Research and Methodology Programs, assisted by **Stacey Cole**, provided the mathematical and statistical techniques as well as the coverage operations.

**Baruti A. Taylor**, under the direction of **A. William Visnansky**, Chief, Special Reports Branch, performed overall coordination of the publication process. **Julius Smith, Jr.** and **Andrew W. Hait** provided primary staff assistance.

The Economic Planning and Coordination Division provided the computer processing procedures. **Shirin A. Ahmed**, Assistant Chief for Post Data Collection Processing, was responsible for editing and the analysts' interactive database review and correction system. Design and specifications were prepared under the supervision of **Dennis L. Wagner**, Chief, Post Collection Census Branch, assisted by **S. Mark Schmidt** and **Robert A. Rosati**.

The staff of the Data Preparation Division, **Judith N. Petty**, Acting Chief, performed mailout preparation and receipt operations, clerical and analytical review activities, data keying, and geocoding review.

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

The Economic Statistical Methods and Programming Division, **Charles P. Pautler, Jr.**, Chief, developed and coordinated the computer processing systems. **Martin S. Harahush**, Assistant Chief for Quinquennial Programs, was responsible for design and implementation of the computer systems. **Gary T. Sheridan**, Chief, Manufactures and Construction Branch, assisted by **Gerald S. Turnage**, supervised the preparation of the computer programs.

Computer Services Division, **Marvin D. Raines**, Chief, performed the computer processing.

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

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

**If you have any questions concerning the statistics in this report, call 301-457-4755.**



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# Introduction to the Economic Census

## PURPOSES AND USES OF THE ECONOMIC CENSUS

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides essential information for government, business, industry, and the general public.

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

Policymaking agencies of the Federal Government use the data, especially in monitoring economic activity and providing assistance to business.

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 and 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.

## AUTHORITY AND SCOPE

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 1992 Economic Census consists of the following eight censuses:

- Census of Retail Trade
- Census of Wholesale Trade
- Census of Service Industries
- Census of Financial, Insurance, and Real Estate Industries
- Census of Transportation, Communications, and Utilities
- Census of Manufactures
- Census of Mineral Industries
- Census of Construction Industries

Special programs also cover enterprise statistics and minority-owned and women-owned businesses. (The 1992 Census of Agriculture and 1992 Census of Governments are conducted separately.) The next economic census is scheduled to be taken in 1998 covering the year 1997.

## AVAILABILITY OF THE DATA

The results of the economic census are available in printed reports for sale by the U.S. Government Printing Office and on compact discs for sale by the Census Bureau. Order forms for all types of products are available on request from Customer Services, Bureau of the Census, Washington, DC 20233-8300. A more complete description of publications being issued from this census is on the inside back cover of this document.

Census facts are also widely disseminated by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. Finally, State data centers in every State as well as business and industry data centers in many States also supply economic census statistics.

## WHAT'S NEW IN 1992

The 1992 Economic Census covers more of the economy than any previous census. New for 1992 are data on communications, utilities, financial, insurance, and real estate, as well as coverage of more transportation industries. The economic, agriculture, and governments censuses now collectively cover nearly 98 percent of all economic activity.

Among other changes, new 1992 definitions affect the boundaries of about a third of all metropolitan areas. Also, the Survey of Women-Owned Businesses has now been expanded to include all corporations.

## HISTORICAL INFORMATION

The economic census has been taken as an integrated program at 5-year intervals since 1967 and before that for 1963, 1958, and 1954. Prior to that time, the individual subcomponents 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 1840 and subsequent censuses to include mining and some commercial activities. In 1902, Congress established a permanent Census Bureau and directed that a census of manufactures be taken every 5 years. The 1905 Manufactures Census was the first time a census was taken apart from the regular every-10-year population census.

The first census of business was taken in 1930, covering 1929. Initially it covered retail and wholesale trade and construction industries, but it was broadened in 1933 to include some of the service trades.

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

The range of industries covered in the economic censuses has continued to expand. The census of construction industries began on a regular basis in 1967, and the scope of service industries was broadened in 1967, 1977, and 1987. The census of transportation began in 1963 as a set of surveys covering travel, transportation of commodities, and trucks, but expanded in 1987 to cover business establishments in several transportation industries. For 1992, these statistics are incorporated into a broadened census of transportation, communications, and utilities. Also new for 1992 is the census of financial, insurance, and real estate industries. This is part of a gradual expansion in coverage of industries previously subjected to government regulation.

The Survey of Minority-Owned Business Enterprises was first conducted as a special project in 1969 and was incorporated into the economic census in 1972 along with the Survey of Women-Owned Businesses.

An economic census has also been taken in Puerto Rico since 1909, in the Virgin Islands of the United States and Guam since 1958, and in the Commonwealth of the Northern Mariana Islands since 1982.

Statistical reports from the 1987 and earlier censuses provide historical figures for the study of long-term time series and are available in some large libraries. All of the census data published since 1967 are still available for sale on microfiche from the Census Bureau.

## **AVAILABILITY OF MORE FREQUENT ECONOMIC DATA**

While the census provides complete enumerations every 5 years, there are many needs for more frequent data as well. The Census Bureau conducts a number of monthly, quarterly, and annual surveys, with the results appearing in publication series such as Current Business Reports (retail and wholesale trade and service industries), the Annual Survey of Manufactures, Current Industrial Reports, and the Quarterly Financial Report. Most of these surveys, while providing more frequent observations, yield less kind-of-business and geographic detail than the census. The County Business Patterns program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county.

## **SOURCES FOR MORE INFORMATION**

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1992 Economic Census and Related Statistics*. More information on the methodology, procedures, and history of the census will be published in the *History of the 1992 Economic Census*. Contact Customer Services for information on availability.

# Census of Manufactures

## GENERAL

This report, from the 1992 Census of Manufactures, is one of a series of 83 industry reports, each of which provides statistics for individual industries or groups of related industries. Additional separate reports will be issued for each State and the District of Columbia and for special subjects such as manufacturers' shipments to the federal government and concentration ratios in manufacturing.

The industry reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, capital expenditures, product shipments, etc.

State reports present similar statistics for each State and its important metropolitan areas (MA's), counties, and places. Selected statistical totals for "all manufacturing" have been shown in the State reports for MA's with 250 employees or more and for counties and places with 500 employees or more.

The *General Summary* report contains industry, product class, and geographic area statistics summarized in one report. The introduction to the *General Summary* discusses, at greater length, many of the subjects described in this introduction. For example, the *General Summary* text discusses the relationship of value added by manufacture to national income by industry of origin, the changes in statistical concepts over the history of the censuses, and the valuation problems arising from intracompany transfers between manufacturing plants of a company and between manufacturing plants and sales offices and sales branches of a company.

## SCOPE OF CENSUS AND DEFINITION OF MANUFACTURING

The 1992 Census of Manufactures covers all establishments with one paid employee or more primarily engaged in manufacturing as defined in the *1987 Standard Industrial Classification (SIC) Manual*<sup>1</sup>. This is the system of industrial classification developed by experts on classification in Government and private industry under the guidance of the Office of Information and Regulatory Affairs, Office of

<sup>1</sup>*Standard Industrial Classification Manual: 1987*. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Management and Budget. This classification system is used by Government agencies as well as many organizations outside the Government.

The SIC Manual defines manufacturing as the mechanical or chemical transformation of substances or materials into new products. The assembly of component parts of products also is considered to be manufacturing if the resulting product is neither a structure nor other fixed improvement. These activities are usually carried on in plants, factories, or mills that characteristically use power-driven machines and materials-handling equipment.

Manufacturing production is usually carried on for the wholesale market, for transfers to other plants of the same company, or to the order of industrial users rather than for direct sale to the household consumer. Some manufacturers in a few industries sell chiefly at retail to household consumers through the mail, through house-to-house routes, or through salespersons. Some activities of a service nature (enameling, engraving, etc.) are included in manufacturing when they are performed primarily for trade. They are considered nonmanufacturing when they are performed primarily to the order of the household consumer.

## RELATIONSHIP BETWEEN ANNUAL SURVEY OF MANUFACTURES AND CENSUS OF MANUFACTURES

The Bureau of the Census conducts the annual survey of manufactures (ASM) in each of the 4 years between the censuses of manufactures. The ASM is a probability-based sample of approximately 62,000 establishments and collects the same industry statistics (employment, payroll, value of shipments, etc.) as the census of manufactures. In addition to collecting the information normally requested on the census form, the establishments in the ASM sample are requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, costs of purchased services, and foreign content of materials consumed. Except for supplemental labor costs, the extra ASM items are collected only in census years.

## ESTABLISHMENT BASIS OF REPORTING

The census of manufactures is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each

location. 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 1992, 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. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company (see Auxiliaries).

## MANUFACTURING UNIVERSE AND CENSUS REPORT FORMS

The 1992 Census of Manufactures universe includes approximately 380,000 establishments. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures. The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. **Small single-establishment companies not sent a report form.** In the 1992 Census of Manufactures, approximately 143,000 small single-establishment companies were excused from filing reports. Selection of these small establishments was done on an industry-by-industry basis and was based on annual payroll and total shipments data as well as on the industry classification codes contained in the administrative records of Federal agencies. The cutoffs were selected so that these administrative-records cases would account for no more than 3 percent of the value of shipments for all manufacturing. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed forms.

Information on the physical location of the establishment, as well as information on payrolls, receipts (shipments), and industry classification, was obtained from the administrative records of other Federal agencies under special arrangements, which 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" (n.s.k.) categories.

The industry classification codes included in the administrative-records 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 at the four-digit SIC level. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes these administrative-records cases were only given a two- or three-digit SIC group. For the 1992 Census of Manufactures, 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 four-digit SIC level. Establishments that did not return the classification form were coded later to those four-digit SIC industries identified as "not elsewhere classified" (n.e.c.) within the given two- or three-digit industry groups.

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

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

2. **Establishments sent a report form.** The over 237,000 establishments covered in the mail canvass were divided into three groups:

- a. **ASM sample establishments.** This group consisted of approximately 62,000 establishments covering 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 (see Appendix B, Annual Survey of Manufactures).

In a census of manufactures year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services. See appendix A, section 2, for an explanation of these items.



The census part of the report form is 1 of approximately 200 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of these many forms to canvass the 459 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 be performing. Respondents were requested to identify the products, the value of each product, and, in a large number of 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 material not identified on the form.

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

- b. **Large and medium establishments (non-ASM).** Approximately 112,000 establishments were included in this group. A variable cutoff, based on administrative-records payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive 1 of the approximately 200 census of manufactures 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 consisted of approximately 63,000 establishments. For those industries where application of the variable cutoff for administrative-records cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or "short" form was used. These establishments received 1 of the approximately 80 versions of the short form, which requested summary product and

material data and totals but no details on employment, payrolls, cost of materials, inventories, and capital expenditures.

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

## AUXILIARIES

In this industry report, the data on employment and payroll are limited to operating manufacturing establishments. The census report form filed for auxiliaries (ES-9200) requested a description of the activity of the establishments serviced. However, the manufacturing auxiliaries were coded only to the two-digit major group of the establishments they served; whereas, the operating establishments were coded to a four-digit manufacturing industry. Data for the approximately 11,000 separately operated auxiliaries are included in the geographic area series and in a report issued as part of the 1992 Enterprise Statistics Survey.

Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms. They can be at different locations from the establishments served or at the same location as one of those establishments but not operating as an integral part thereof and serving two establishments or more. Where auxiliary operations are conducted at the same location as the manufacturing operation and operate as an integral part thereof, they usually are included in the report for the operating manufacturing establishment.

Included in the broad category of auxiliaries are administrative offices. Employees in administrative offices are concerned with the general management of multiestablishment companies, i.e., with the general supervision and control of two units or more, such as manufacturing plants, mines, sales branches, or stores. The functions of these employees may include the following:

1. Program planning, including sales research and coordination of purchasing, production, and distribution
2. Company purchasing, including general contracts and purchasing methods
3. Company financial policy and accounting
4. General engineering, including design of product machinery and equipment, and direction of engineering effort conducted at the individual operation locations
5. Company personnel matters
6. Legal and patent matters

Other types of auxiliaries serving the plants or central management of the company include purchasing offices, sales promotion offices, research and development organizations, etc.

## INDUSTRY CLASSIFICATION OF ESTABLISHMENTS

Each of the establishments covered in the census was classified in 1 of 459 manufacturing industries in accordance with the industry definitions in the 1987 SIC Manual. The 1987 edition of this manual represents a major revision for manufacturing industries from the 1972 edition and its 1977 supplement. Appendix A of the 1987 Manual notes the revisions in the four-digit industry levels between 1972/77 and 1987.

An industry is generally defined as a group of establishments producing the same product or a closely related group of products. The product groupings from which industry classifications are derived are based on considerations such as similarity of manufacturing processes, types of materials used, types of customers, and the like. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees. The system operates in such a way that the definitions progressively become narrower with successive additions of numerical digits. For 1992, there are 20 major groups (two-digit SIC), 139 industry groups (three-digit SIC), and 459 industries (four-digit SIC). This represents an expansion of four-digit industries from 452 in 1972/77 and a reduction of three-digit groups from 143 in 1972/77. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are about 11,000 products identified by a seven-digit code. The seven-digit products are considered the primary products of the industry with the same four digits.

Accordingly, an establishment is usually classified in a particular industry on the basis of its major activity during a particular year, i.e., production of the products primary to that industry exceeds, in value, production of the products primary to any other single industry. In a few instances, however, the industry classification of an establishment is not only determined by the products it makes but also by the process employed in operations. Refining of nonferrous metals from ore or rolling and drawing of nonferrous metals (processes which involve heavy capitalization in specialized equipment) would be classified according to the process used during a census year. These establishments then would be "frozen" in that industry during the following ASM years.

In either a census or ASM year, establishments included in the ASM sample with certainty weight, other than those involved with heavily capitalized activities described above, 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 (see Appendix B, Annual Survey of Manufactures). 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, at the aggregate level, some industries comprise different mixes of establishments between survey years and establishment data for such industry statistics as employment and payroll may be tabulated in different industries between survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the four-digit SIC 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-records 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.

While some establishments produce only the primary products of the industry in which they are classified, all establishments of an industry rarely specialize to this extent. The industry statistics (employment, inventories, value added by manufacture, total value of shipments including resales and miscellaneous receipts, etc.) shown in tables 1a through 5a, therefore, reflect not only the primary activities of the establishments in that industry but also their secondary activities. The product statistics in table 6a represent the output of all establishments whether or not they are classified in the same industry as the product. For this reason, in relating the industry statistics, especially the value of shipments to the product statistics, the composition of the industry's output shown in table 5b should be considered.

The extent to which industry and product statistics may be matched with each other is measured by two ratios which are computed from the figures shown in table 5b. The first of these ratios, called the primary product specialization ratio, measures the proportion of product shipments (both primary and secondary) of the establishments classified in the industry represented by the primary products of those establishments. The second ratio, called the coverage ratio, is the proportion of primary products shipped by the establishments classified in the industry to total shipments of such products by all manufacturing establishments.

However, establishments making products falling into the same industry category may use a variety of processes and materials to produce them. Also, the same industry classification (based on end products) may include both establishments that are highly integrated and those that

put only the finishing touches on an already highly fabricated item. For example, the refrigeration equipment industry includes instances of almost complete integration (production of the compressor, condensing unit, electric motor, casting, stamping of the case, and final assembly) all carried on at one plant. On the other hand, the condensing unit, the motor, and the case may be purchased and only assembled into the finished product.

In some instances, separate industry categories have been established for integrated and nonintegrated establishments. For other industries, the census provides separate statistics on the production of intermediate commodities made and used in the producing plant. For some industries characterized by many plants of the same company, separate figures on interplant transfers of products usually are shown.

Differences in the integration of production processes, types of operations, and alternatives in types of materials used should be considered when relating the industry statistics (employment, payrolls, value added, etc.) to the product and material data.

### VALUE OF SHIPMENTS FOR THE INDUSTRY COMPARED WITH VALUE OF PRODUCT SHIPMENTS

This report shows value of shipments data for industries and products. In tables 1a through 5b, 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 table 6a represents the total value of all products shipped that are classified as primary to an industry.

### CENSUS DISCLOSURE RULES

In accordance with Federal law governing census reports, no data are published that would disclose the data for an individual establishment or company. However, the number of establishments classified in a specific industry is not considered a disclosure, so this information may be released even though other information is withheld.

The disclosure analysis for the industry statistics in tables 1a through 5a of this report 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 new capital expenditures. However, the suppressed data are included in higher-level totals. A separate disclosure analysis is performed for new capital expenditures that can be suppressed even though value of shipments data are publishable.

### SPECIAL TABULATIONS

Special tabulations of data collected in the 1992 Census of Manufactures may be obtained on computer diskette or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief, Manufacturing and Construction Division, Bureau of the Census, Washington, DC 20233.

### ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
- (NA) Not available.
- (NC) Not comparable.
- (S) Withheld because estimate did not meet publication standards.
- (X) Not applicable.
- (Z) Less than half the unit shown.
- n.e.c. Not elsewhere classified.
- n.s.k. Not specified by kind.
- pt. Part.
- r Revised.
- SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

### CONTACTS FOR DATA USERS

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SIC's 357, 36-39	Bruce Goldhirsch	301-457-4817
Import/ export publications	Foreign Trade Division	301-457-3041
Industry analysis and forecasting	International Trade Administration	202-377-4356

# Users' Guide for Locating Statistics in This Report by Table Number

[For explanation of terms, see appendixes]

Item	Four-digit industry statistics							Five-digit product class and seven-digit product statistics			
	Historical	Operating ratios	By geographic area	Summary and supplemental	By employment size	By industry and product class specialization	Materials consumed by kind	Industry-product analysis	Product shipments	Product class by geographic area	Historical product class
Number of companies . . . . .	1a			3a					*6a		
Number of establishments . . . . .	1a		2	3a	4	5a					
Employment and payroll:											
Number of employees . . . . .	1a	1b	2	3a	4	5a					
Payroll . . . . .	1a	1b	2	3a	4	5a					
Supplemental labor costs . . . . .				3a							
Production workers . . . . .	1a	1b	2	3a	4	5a					
Production-worker hours . . . . .	1a	1b	2	3a	4	5a					
Production-worker wages . . . . .	1a	1b	2	3a	4	5a					
Shipments, cost of materials, and value added:											
Value of shipments (four-digit) . . . . .	1a	1b	2	3a	4	5a		5b			
Product class shipments (five-digit) . . . . .									6a	6b	6c
Product shipments (seven-digit) . . . . .									6a		
Value added by manufacture . . . . .	1a	1b	2	3a	4	5a					
Cost of materials . . . . .	1a	1b	2	3a	4	5a					
Fuels and electric energy . . . . .				3a							
Materials consumed by kind . . . . .							7				
Inventories:											
Total, end of year . . . . .	1a			3a	4						
By stage of fabrication . . . . .				3a							
Capital expenditures, assets, rental payments, and purchased services:											
New capital expenditures . . . . .	1a		2	3b	4	5a					
Used plant and equipment expenditures . . . . .				3b							
Gross assets . . . . .				3b							
Depreciation . . . . .				3b							
Retirements of buildings and machinery . . . . .				3b							
Rental payments . . . . .				3b							
Foreign content of materials consumed . . . . .				3c							
Purchased services . . . . .				3c							
Ratios:											
Specialization . . . . .	1a							5b			
Coverage . . . . .	1a							5b			

\*Number of companies with shipments of more than \$100 thousand.

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## Nonferrous Metal Mills and Miscellaneous Primary Metal Products

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# Description of Industries and Summary of Findings

This report shows 1992 Census of Manufactures statistics for establishments classified in each of the following industries:

## SIC code and title

3351	Copper Rolling and Drawing
3353	Aluminum Sheet, Plate, and Foil
3354	Aluminum Extruded Products
3355	Aluminum Rolling and Drawing, N.E.C.
3356	Nonferrous Rolling and Drawing, N.E.C.
3357	Nonferrous Wiredrawing and Insulating
3398	Metal Heat Treating
3399	Primary Metal Products, N.E.C.

The industry statistics (employment, payroll, cost of materials, value of shipments, inventories, etc.) are reported for each establishment as a whole. Aggregates of such data for an industry reflect not only the primary activities of the establishments but also their activities in the manufacture of secondary products as well as their miscellaneous activities (contract work on materials owned by others, repair work, etc.). This fact should be taken into account in comparing industry statistics (tables 1 through 5a) with product statistics (table 6) showing shipments by all industries of the primary products of the specified industry. The extent of the "product mix" is indicated in table 5b, which shows the value of primary and secondary products shipped by establishments classified in the specified industry and the value of primary products of the industry shipped as secondary products by establishments classified in other industries.

Establishment data were tabulated based on industry definitions included in the *1987 Standard Industrial Classification (SIC) Manual*<sup>1</sup>. The 1987 edition represents a major revision for manufacturing industries from the 1972 edition and its 1977 supplement. In addition to the 1987 SIC revision, changes were made to the product class (five-digit) and product code (seven-digit) categories. The product class and product code comparability between the 1992 and 1987 censuses is shown in appendix C. This appendix presents, in tabular form, the linkage from 1992 to 1987, and 1987 to 1992.

<sup>1</sup>*Standard Industrial Classification Manual: 1987*. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

## INDUSTRY 3351, COPPER ROLLING AND DRAWING

This industry is made up of establishments primarily engaged in rolling, drawing, and extruding copper, brass, bronze, and other copper base alloy basic shapes, such as plate, sheet, strip, bar, and tubing. Establishments engaged in recovering copper and its alloys from scrap or dross are classified in industry 3341.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3351, Copper Rolling and Drawing, had employment of 18.9 thousand. The employment figure was 16 percent below the 22.6 thousand reported in 1987.

The leading States in employment in 1992 were Illinois, Pennsylvania, New York, and Connecticut, accounting for approximately 45 percent of the industry's employment. These same States were the leaders in 1987.

The total value of shipments for establishments classified in this industry was \$6.0 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 3351 shipped \$5.4 billion of products considered primary to the industry, \$204.1 million of secondary products, and had \$376.9 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 96 percent (specialization ratio). In 1987, the specialization ratio was 94 percent.

Establishments in this industry also accounted for 98 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio also was 98 percent.

The products primary to industry 3351, no matter in what industry they were produced, appear in table 6a and aggregate to \$5.5 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the cooper rolling and drawing industry amounted to \$4.5 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of the total value of shipments.

### **INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL**

This industry is made up of establishments primarily engaged in flat rolling aluminum and aluminum-base alloy basic shapes, such as sheet, plate, and foil, including establishments producing welded tube. Also included are establishments primarily producing similar products by continuous castings.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3353, Aluminum Sheet, Plate, and Foil, had employment of 24.4 thousand. The employment figure was 7 percent below the 26.1 thousand reported in 1987.

The leading States in employment in 1992 were Alabama, Iowa, Indiana, and Tennessee, accounting for approximately 46 percent of the industry's employment. These same States were the leaders in 1987.

The total value of shipments for establishments classified in this industry was \$10.6 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 3353 shipped \$9.3 billion of products considered primary to the industry, \$421.2 million of secondary products, and had \$911.4 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 96 percent (specialization ratio). In 1987, the specialization ratio also was 96 percent.

Establishments in this industry also accounted for 98 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio also was 98 percent.

The products primary to industry 3353, no matter in what industry they were produced, appear in table 6a and aggregate to \$9.5 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the aluminum sheets, plate, and foil industry amounted to \$7.3 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 25 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for less than 1 percent of the total value of shipments.

### **INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS**

This industry is made up of establishments primarily engaged in extruding aluminum and aluminum-base alloy basic shapes, such as rod and bar, pipe and tube, and tube blooms, including establishments producing tube by drawing.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3354, Aluminum Extruded Products, had employment of 25.6 thousand. The employment figure was 17 percent below the 30.7 thousand reported in 1987. Compared with 1991, employment decreased 12 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were Indiana, California, Georgia, and Ohio. This represents a shift from 1987 when California, Indiana, Georgia, and Michigan were the leading States.

The total value of shipments for establishments classified in this industry was \$3.7 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 3354 shipped \$3.4 billion of products considered primary to the industry, \$212.1 million of secondary products, and had \$127.3 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 94 percent (specialization ratio). In 1987, the specialization ratio was 87 percent.

Establishments in this industry also accounted for 92 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 97 percent.

The products primary to industry 3354, no matter in what industry they were produced, appear in table 6a and aggregate to \$3.7 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the aluminum extruded products industry amounted to \$2.4 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 4 percent of the total value of shipments.

### **INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.**

This industry is made up of establishments primarily engaged in rolling, drawing, and other operations resulting in the production of aluminum ingot, including extrusion ingot, and aluminum and aluminum-base alloy shapes, not elsewhere classified, such as rolled and continuous cast rod and bar. Establishments primarily engaged in producing aluminum powder, flake, and paste are classified in industry 3399, and those producing aluminum wire and cable from purchased wire bars, rods, or wire are classified in industry 3357.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3355, Aluminum Rolling and Drawing, N.E.C., had employment of 1.5 thousand. The employment figure was 67 percent above the .9 thousand reported in 1987. Compared with 1991, employment increased 15 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were New Jersey, Ohio, and Kentucky. This represents a shift from 1987 when New York, Kentucky, and California were the leading States.

The total value of shipments for establishments classified in this industry was \$778.0 million.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 3355 shipped \$646.3 million of products considered primary to the industry.

Establishments in this industry also accounted for 60 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 42 percent.

The products primary to industry 3355, no matter in what industry they were produced, appear in table 6a and aggregate to \$1.1 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the aluminum rolling and drawing, not elsewhere classified, industry amounted to \$651.1 million. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 9 percent of the total value of shipments.

### **INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.**

This industry is made up of establishments primarily engaged in rolling, drawing, and extruding nonferrous metals other than copper and aluminum. The products of this industry are in the form of basic shapes, such as plate, sheet, strip, bar, and tubing. Establishments primarily engaged in recovering nonferrous metals and alloys from scrap or dross are classified in industry 3341; those manufacturing gold, silver, tin, and other foils, except aluminum, are classified in industry 3497; and those manufacturing aluminum foil are classified in industry 3353.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3356, Nonferrous Rolling and Drawing, N.E.C., had employment of 16.0 thousand. The employment figure was 11 percent below the 17.9 thousand reported in 1987. Compared with 1991, employment decreased 8 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were Oregon, Pennsylvania, West Virginia, and Ohio, accounting for approximately 39 percent of the industry's employment. This represents a shift from 1987 when Massachusetts, Ohio, Oregon, and West Virginia were the leading States.

The total value of shipments for establishments classified in this industry was \$2.7 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 3356 shipped \$2.5 billion of products considered primary to the industry, \$142.8 million of secondary products, and had \$117.5 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 94 percent (specialization ratio). In 1987, the specialization ratio was 91 percent.



Establishments in this industry also accounted for 95 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 91 percent.

The products primary to industry 3356, no matter in what industry they were produced, appear in table 6a and aggregate to \$2.6 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the nonferrous rolling and drawing, not elsewhere classified, industry amounted to \$1.5 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 9 percent of the total value of shipments.

## **INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING**

This industry is made up of establishments primarily engaged in drawing, drawing and insulating, and insulating wire and cable of nonferrous metals from purchased wire bars, rods, or wire. Also included are establishments primarily engaged in manufacturing insulated fiber optic cable. Establishments primarily engaged in manufacturing glass fiber optic materials are classified in industry 3229, and those manufacturing fabricated wire products from purchased wire are classified in industry 3496.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3357, Nonferrous Wiredrawing and Insulating, had employment of 60.6 thousand. The employment figure was 7 percent below the 64.9 thousand reported in 1987. Compared with 1991, employment increased 6 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were Indiana, North Carolina, Georgia, and Illinois, accounting for approximately 27 percent of the industry's employment. This represents a shift from 1987 when Indiana, Massachusetts, New York, and Georgia accounted for approximately 31 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$13.1 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous

receipts, such as resales and contract receipts. Industry 3357 shipped \$12.1 billion of products considered primary to the industry, \$500.1 million of secondary products, and had \$515.8 billion of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 96 percent (specialization ratio). In 1987, the specialization ratio was 97 percent.

Establishments in this industry also accounted for 98 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio also was 98 percent.

The products primary to industry 3357, no matter in what industry they were produced, appear in table 6a and aggregate to \$12.3 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the nonferrous wiredrawing and insulating industry amounted to \$8.2 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 15 percent of the total value of shipments.

## **INDUSTRY 3398, METAL HEAT TREATING**

This industry is made up of establishments primarily engaged in the heat treating of metals for the trade.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3398, Metal Heat Treating, had employment of 17.4 thousand. The employment figure was 3 percent below the 18.0 thousand reported in 1987. Compared with 1991, employment decreased 13 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were Michigan, Ohio, California, and Indiana, accounting for approximately 49 percent of the industry's employment. This represents a shift from 1987 when Michigan, Ohio, California, and Illinois were the leading States.

The total value of shipments for establishments classified in this industry was \$2.0 billion.

The total cost of materials, services, and fuels and energy used by establishments classified in the metal heat treating industry amounted to \$772.4 million. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 14 percent of the total value of shipments.

### **INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.**

This industry is made up of establishments primarily engaged in manufacturing primary metal products, not elsewhere classified, such as nonferrous nails, brads, and spikes, and metal powder, flakes, and paste.

The 1992 definition of this industry is the same as that used in the 1987 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1992 Census of Manufactures, Industry 3399, Primary Metal Products, N.E.C., had employment of 12.7 thousand. The employment figure was 8 percent below the 13.8 thousand reported in 1987. Compared with 1991, employment increased 2 percent. The 1991 data are based on the Census Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The leading States in employment in 1992 were Massachusetts, Pennsylvania, New Jersey, and Ohio. This represents a shift from 1987 when Massachusetts, Pennsylvania, New Jersey, and California were the leading States.

The total value of shipments for establishments classified in this industry was \$1.9 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry in which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 3399 shipped \$1.6 billion of products considered primary to the industry, \$239.6 million of secondary products, and had \$61.9 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in this industry was 87 percent (specialization ratio). In 1987, the specialization ratio was 84 percent.

Establishments in this industry also accounted for 88 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 83 percent.

The products primary to industry 3399, no matter in what industry they were produced, appear in table 6a and aggregate to \$1.8 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and energy used by establishments classified in the primary metal products, not elsewhere classified, industry amounted to \$1.0 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with less than 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 12 percent of the total value of shipments.

**Table 1a. Historical Statistics for the Industry: 1992 and Earlier Years**

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

Year <sup>1</sup>	All establishments <sup>3</sup>			All employees		Production workers			Value added by manufacture <sup>4</sup> (million dollars)	Cost of materials <sup>5</sup> (million dollars)	Value of shipments (million dollars)	New capital expenditures <sup>6</sup> (million dollars)	End-of-year inventories <sup>4</sup> (million dollars)	Ratios	
	Companies <sup>2</sup> (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization <sup>7</sup> (per cent)	Coverage <sup>8</sup> (per cent)
<b>INDUSTRY 3351, COPPER ROLLING AND DRAWING</b>															
1992 Census ---	88	115	86	18.9	606.1	14.5	32.9	424.6	1 453.3	4 487.1	6 000.1	126.8	690.8	96	98
1991 ASM -----	(NA)	(NA)	(NA)	20.1	640.0	15.3	33.4	448.1	1 362.4	4 551.2	6 005.1	178.6	719.4	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	21.4	662.8	16.3	35.6	460.7	1 679.3	5 223.2	6 880.2	126.1	858.4	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	22.6	655.0	17.4	37.3	459.0	1 667.5	5 505.0	7 259.5	179.5	888.6	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	22.5	622.9	17.4	37.4	444.2	1 807.8	4 890.8	6 521.0	128.6	989.5	(NA)	(NA)
1987 Census ---	94	121	91	22.6	589.1	17.6	36.8	418.2	1 610.2	3 617.9	5 134.0	90.4	786.8	94	98
1986 ASM -----	(NA)	(NA)	(NA)	21.2	525.1	16.5	34.2	378.1	1 182.1	2 629.7	3 820.6	85.1	542.3	(NA)	(NA)
1985 ASM -----	(NA)	(NA)	(NA)	22.4	517.8	17.1	34.5	367.1	1 061.2	2 611.2	3 671.8	132.0	540.8	(NA)	(NA)
1984 ASM -----	(NA)	(NA)	(NA)	23.4	554.3	18.0	37.8	399.1	1 285.7	2 817.5	4 020.2	110.0	592.1	(NA)	(NA)
1983 ASM -----	(NA)	(NA)	(NA)	22.8	511.2	17.1	33.9	357.5	1 189.2	2 663.5	3 855.1	94.0	568.6	(NA)	(NA)
1982 Census ---	102	137	95	23.3	468.2	17.2	32.6	322.9	957.7	2 267.0	3 270.0	123.9	557.1	90	95
1981 ASM -----	(NA)	(NA)	(NA)	31.2	615.6	23.8	47.5	444.4	1 244.3	3 524.3	4 783.6	104.1	542.9	(NA)	(NA)
1980 ASM -----	(NA)	(NA)	(NA)	31.0	573.7	23.6	47.9	411.1	1 108.2	3 723.4	4 839.2	79.5	548.8	(NA)	(NA)
1979 ASM -----	(NA)	(NA)	(NA)	35.8	624.1	28.1	57.2	458.3	1 343.8	4 014.4	5 332.5	91.9	586.7	(NA)	(NA)
1978 ASM -----	(NA)	(NA)	(NA)	33.3	513.4	25.9	53.7	383.3	1 169.3	2 966.1	4 090.5	71.2	496.3	(NA)	(NA)
1977 Census ---	101	140	99	31.3	455.5	24.2	50.5	338.7	973.7	3 019.9	4 013.8	64.4	472.1	85	92
<b>INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL</b>															
1992 Census ---	45	63	44	24.4	1 014.3	18.3	39.9	717.4	3 229.2	7 273.1	10 648.7	418.3	1 517.1	96	98
1991 ASM -----	(NA)	(NA)	(NA)	24.9	999.7	18.4	39.3	701.1	2 579.8	7 823.7	10 773.0	567.2	1 641.7	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	25.1	1 021.0	18.7	39.7	719.9	2 508.5	8 682.0	11 121.5	681.3	2 124.8	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	25.7	993.0	19.3	40.8	700.4	1 864.7	9 667.4	11 820.6	551.9	2 101.5	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	26.1	963.4	19.5	41.2	688.9	1 959.7	9 925.2	11 647.1	524.0	2 421.3	(NA)	(NA)
1987 Census ---	39	56	44	26.1	912.3	19.8	40.2	659.0	1 790.0	7 841.4	9 497.2	439.2	2 104.8	96	98
1986 ASM -----	(NA)	(NA)	(NA)	26.7	910.7	20.4	39.7	670.0	2 240.1	6 523.6	8 699.4	439.1	1 862.5	(NA)	(NA)
1985 ASM -----	(NA)	(NA)	(NA)	26.9	926.6	20.8	42.0	689.0	1 797.7	6 382.5	8 424.8	348.0	1 806.4	(NA)	(NA)
1984 ASM -----	(NA)	(NA)	(NA)	26.9	914.5	21.0	41.6	695.9	1 720.9	7 222.7	9 118.8	359.3	2 126.6	(NA)	(NA)
1983 ASM -----	(NA)	(NA)	(NA)	28.1	907.4	21.9	42.9	697.8	1 503.9	6 859.9	8 453.5	296.9	2 295.7	(NA)	(NA)
1982 Census ---	39	56	43	27.7	862.1	21.0	39.9	639.9	1 154.0	5 898.4	7 213.8	260.4	2 300.2	95	99
1981 ASM -----	(NA)	(NA)	(NA)	32.0	950.6	24.7	49.0	717.7	1 893.7	7 241.7	8 866.9	357.7	2 528.1	(NA)	(NA)
1980 ASM -----	(NA)	(NA)	(NA)	32.7	867.4	25.4	50.8	658.6	1 752.0	6 651.3	8 122.0	402.5	2 201.0	(NA)	(NA)
1979 ASM -----	(NA)	(NA)	(NA)	34.2	814.9	27.0	55.1	636.0	1 871.7	6 198.2	7 990.9	326.0	1 850.6	(NA)	(NA)
1978 ASM -----	(NA)	(NA)	(NA)	33.9	733.8	26.9	53.1	567.3	1 853.0	5 612.4	7 349.1	219.1	1 742.6	(NA)	(NA)
1977 Census ---	30	53	45	31.4	613.5	25.0	50.6	480.1	1 340.6	4 900.5	5 924.0	157.7	1 625.2	92	99
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS</b>															
1992 Census ---	134	193	153	25.6	687.2	19.7	42.8	456.4	1 374.0	2 358.7	3 735.6	150.0	414.3	94	92
1991 ASM -----	(NA)	(NA)	(NA)	29.2	767.1	22.4	48.6	507.8	1 422.1	2 781.8	4 260.1	113.3	513.4	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	30.9	793.0	23.8	51.3	531.3	1 466.9	3 335.2	4 850.3	128.2	631.7	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	32.1	802.6	24.3	50.7	536.0	1 514.4	3 974.7	5 509.4	(D)	683.0	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	30.0	740.5	22.9	49.4	505.7	1 516.2	3 599.5	5 077.6	(D)	752.7	(NA)	(NA)
1987 Census ---	131	204	161	30.7	740.6	23.5	50.0	504.7	1 404.7	2 908.8	4 292.8	116.9	640.9	87	97
1986 ASM -----	(NA)	(NA)	(NA)	28.4	658.4	21.8	45.6	451.1	1 102.9	2 461.2	3 573.6	109.0	492.2	(NA)	(NA)
1985 ASM -----	(NA)	(NA)	(NA)	29.1	639.0	22.7	47.3	450.3	1 173.8	2 384.1	3 575.7	120.6	491.8	(NA)	(NA)
1984 ASM -----	(NA)	(NA)	(NA)	28.2	607.8	22.1	45.6	435.7	1 194.1	2 566.1	3 718.7	125.0	547.7	(NA)	(NA)
1983 ASM -----	(NA)	(NA)	(NA)	26.0	538.4	20.1	40.9	379.9	915.6	2 193.7	3 057.3	96.8	587.6	(NA)	(NA)
1982 Census ---	134	193	151	25.4	499.0	19.3	38.0	344.1	859.3	1 778.5	2 673.1	114.7	489.7	89	91
1981 ASM -----	(NA)	(NA)	(NA)	26.5	501.9	20.2	40.9	349.0	940.9	2 002.4	2 939.0	80.2	482.5	(NA)	(NA)
1980 ASM -----	(NA)	(NA)	(NA)	27.6	472.7	21.1	41.9	334.5	951.8	1 933.1	2 870.6	76.2	443.3	(NA)	(NA)
1979 ASM -----	(NA)	(NA)	(NA)	28.6	455.7	22.6	46.0	334.2	989.0	1 850.0	2 826.0	63.1	409.4	(NA)	(NA)
1978 ASM -----	(NA)	(NA)	(NA)	28.5	411.1	22.8	46.8	303.5	830.9	1 606.8	2 414.0	50.8	389.0	(NA)	(NA)
1977 Census ---	133	193	146	26.5	355.9	21.2	44.0	264.1	678.6	1 386.1	2 050.0	48.2	337.2	88	92
<b>INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.</b>															
1992 Census ---	27	29	11	1.5	51.0	1.1	2.7	30.5	128.5	651.1	778.0	14.7	67.1	(D)	60
1991 ASM -----	(NA)	(NA)	(NA)	1.3	40.4	.9	2.2	21.7	90.1	479.7	569.5	3.4	49.1	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	.8	22.6	.6	1.2	14.6	54.6	333.1	388.3	1.9	34.9	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	.9	22.9	.6	1.3	15.6	50.4	326.5	374.7	(D)	39.3	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	.8	23.5	.6	1.4	17.0	162.7	381.8	541.1	(D)	57.5	(NA)	(NA)
1987 Census ---	29	29	14	.9	24.2	.6	1.4	17.0	109.3	392.6	482.3	2.8	54.8	98	94
1986 ASM -----	(NA)	(NA)	(NA)	1.7	51.5	1.3	2.7	35.4	122.7	481.6	613.7	7.5	71.1	(NA)	(NA)
1985 ASM -----	(NA)	(NA)	(NA)	2.0	55.0	1.5	3.1	38.0	168.8	599.3	783.4	13.2	86.4	(NA)	(NA)
1984 ASM -----	(NA)	(NA)	(NA)	1.9	56.0	1.5	2.9	39.0	166.7	702.0	905.2	13.8	95.6	(NA)	(NA)
1983 ASM -----	(NA)	(NA)	(NA)	2.2	57.9	1.6	3.2	40.7	139.3	725.9	844.3	9.0	135.2	(NA)	(NA)
1982 Census ---	24	27	15	2.6	65.0	1.9	3.5	44.2	30.7	535.3	670.8	5.5	117.3	77	95
1981 ASM -----	(NA)	(NA)	(NA)	4.9	118.3	3.7	7.3	83.1	490.6	895.4	1 323.2	23.8	380.3	(NA)	(NA)
1980 ASM -----	(NA)	(NA)	(NA)	5.1	111.7	3.9	7.7	80.3	545.9	982.7	1 486.8	22.8	267.0	(NA)	(NA)
1979 ASM -----	(NA)	(NA)	(NA)	5.1	107.8	3.9	7.9	78.0	383.8	934.9	1 310.6	40.0	214.6	(NA)	(NA)
1978 ASM -----	(NA)	(NA)	(NA)	5.0	94.6	3.9	7.6	69.1	239.3	934.5	1 152.5	26.8	194.2	(NA)	(NA)
1977 Census ---	18	22	15	4.7	78.1	3.6	6.9	56.5	222.8	754.9	1 001.0	16.1	169.5	91	96
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.</b>															
1992 Census ---	159	182	92	16.0	545.3	10.7	22.2	332.2	1 193.8	1 466.4	2 713.3	91.8	789.2	94	95
1991 ASM -----	(NA)	(NA)	(NA)	17.4	579.7	11.8	23.8	350.6	1 188.1	1 709.9	3 023.6	82.4	898.1	(NA)	(NA)
1990 ASM -----	(NA)	(NA)	(NA)	18.6	612.1	12.4	25.6	373.1	1 502.5	1 967.8	3 481.2	80.6	913.9	(NA)	(NA)
1989 ASM -----	(NA)	(NA)	(NA)	18.5	589.2	12.6	26.4	362.6	1 541.9	2 138.5	3 635.0	100.5	1 137.1	(NA)	(NA)
1988 ASM -----	(NA)	(NA)	(NA)	18.4	559.0	12.2	25.6	331.0	1 378.3	2 029.6	3 328.5	104.4	1 048.3	(NA)	(NA)
1987 Census ---	140	172	93	17.9	527.7	11.8	25.2	308.5	1 187.9	1 876.7	3 049.4	96.2	1 062.7	91	96
1986 ASM -----	(NA)	(NA)	(NA)												

**Table 1a. Historical Statistics for the Industry: 1992 and Earlier Years—Con.**

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

Year <sup>1</sup>	All establishments <sup>3</sup>			All employees		Production workers			Value added by manufacture <sup>4</sup> (million dollars)	Cost of materials <sup>5</sup> (million dollars)	Value of shipments (million dollars)	New capital expenditures <sup>6</sup> (million dollars)	End-of-year inventories <sup>4</sup> (million dollars)	Ratios	
	Companies <sup>2</sup> (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization <sup>7</sup> (per cent)	Coverage <sup>8</sup> (per cent)
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.—Con.</b>															
1978 ASM-----	(NA)	(NA)	(NA)	18.2	300.2	12.9	26.4	189.3	756.0	2 061.7	2 747.4	58.9	514.9	(NA)	(NA)
1977 Census ---	153	173	86	17.2	260.2	12.0	24.7	158.7	569.0	2 000.4	2 596.5	34.3	477.5	94	93
<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING</b>															
1992 Census ---	379	528	354	60.6	1 724.4	44.8	94.1	1 120.3	4 867.7	8 229.1	13 106.7	364.2	1 741.8	96	98
1991 ASM-----	(NA)	(NA)	(NA)	57.1	1 575.2	41.9	86.3	1 027.3	4 313.1	7 307.4	11 686.4	277.9	1 601.4	(NA)	(NA)
1990 ASM-----	(NA)	(NA)	(NA)	60.2	1 600.8	44.6	90.1	1 037.5	4 620.7	7 995.6	12 609.4	300.3	1 707.2	(NA)	(NA)
1989 ASM-----	(NA)	(NA)	(NA)	64.0	1 636.8	48.5	98.7	1 080.8	4 838.1	8 589.2	13 459.9	282.1	1 726.2	(NA)	(NA)
1988 ASM-----	(NA)	(NA)	(NA)	64.9	1 588.6	48.6	101.7	1 065.5	4 684.7	7 968.0	12 485.4	248.2	1 781.3	(NA)	(NA)
1987 Census ---	341	487	355	64.9	1 504.3	48.4	99.2	1 010.1	4 229.5	6 722.3	10 826.5	243.9	1 587.9	97	98
1986 ASM-----	(NA)	(NA)	(NA)	59.0	1 352.5	44.3	89.9	898.6	3 309.8	5 743.8	9 055.8	219.6	1 330.1	(NA)	(NA)
1985 ASM-----	(NA)	(NA)	(NA)	64.4	1 411.4	47.9	96.1	934.1	3 427.0	5 706.4	9 217.4	308.4	1 338.3	(NA)	(NA)
1984 ASM-----	(NA)	(NA)	(NA)	68.5	1 460.2	51.7	102.8	981.3	3 461.7	5 954.3	9 323.1	249.9	1 446.7	(NA)	(NA)
1983 ASM-----	(NA)	(NA)	(NA)	63.9	1 291.9	47.1	93.6	850.4	2 762.5	5 522.7	8 320.8	219.9	1 305.5	(NA)	(NA)
1982 Census ---	271	440	340	67.6	1 269.6	49.8	95.5	835.6	2 826.6	5 262.8	8 216.9	294.4	1 295.6	97	95
1981 ASM-----	(NA)	(NA)	(NA)	66.3	1 191.4	49.9	101.2	811.1	2 977.6	5 997.8	8 888.1	293.4	1 363.1	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	67.5	1 125.7	51.3	103.6	768.9	2 911.1	6 006.1	8 851.8	230.8	1 266.8	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	68.2	1 062.2	52.3	108.5	738.3	2 822.7	5 459.1	8 165.9	177.5	1 219.5	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	68.0	968.7	52.2	108.1	675.9	2 421.6	4 690.9	7 060.4	164.8	1 014.1	(NA)	(NA)
1977 Census ---	245	421	320	66.3	876.8	50.0	101.8	603.4	2 117.6	4 493.1	6 595.4	139.8	960.7	94	93
<b>INDUSTRY 3398, METAL HEAT TREATING</b>															
1992 Census ---	634	731	299	17.4	513.9	13.0	27.7	322.7	1 194.1	772.4	1 952.4	66.9	229.8	( <sup>10</sup> )	( <sup>10</sup> )
1991 ASM-----	(NA)	(NA)	(NA)	19.9	548.4	14.9	32.2	355.0	1 194.4	568.1	1 767.4	63.7	152.0	(NA)	(NA)
1990 ASM-----	(NA)	(NA)	(NA)	20.5	566.1	15.4	32.8	354.9	1 274.0	603.9	1 871.7	84.1	162.5	(NA)	(NA)
1989 ASM-----	(NA)	(NA)	(NA)	20.7	558.1	15.7	33.1	346.3	1 205.7	649.1	1 847.0	81.8	179.5	(NA)	(NA)
1988 ASM-----	(NA)	(NA)	(NA)	19.3	487.5	14.1	31.7	301.8	1 135.2	630.0	1 757.7	49.8	176.8	(NA)	(NA)
1987 Census ---	631	725	294	18.0	421.6	13.4	27.9	264.2	1 015.4	383.3	1 397.3	81.6	101.0	( <sup>10</sup> )	( <sup>10</sup> )
1986 ASM-----	(NA)	(NA)	(NA)	18.6	411.9	14.3	29.9	273.4	973.5	408.0	1 381.7	84.6	52.5	(NA)	(NA)
1985 ASM-----	(NA)	(NA)	(NA)	18.4	382.9	14.2	28.9	255.3	958.6	388.5	1 309.6	79.4	48.6	(NA)	(NA)
1984 ASM-----	(NA)	(NA)	(NA)	18.0	373.7	13.7	28.0	252.9	918.4	520.1	1 397.0	71.3	47.4	(NA)	(NA)
1983 ASM-----	(NA)	(NA)	(NA)	16.9	314.9	12.5	24.6	210.5	691.7	377.9	1 064.1	26.8	102.9	(NA)	(NA)
1982 Census ---	669	758	288	17.7	324.2	13.5	26.9	216.6	684.5	416.0	1 128.2	42.5	98.1	( <sup>10</sup> )	( <sup>10</sup> )
1981 ASM-----	(NA)	(NA)	(NA)	17.8	321.2	14.0	28.0	210.6	872.2	370.2	1 190.6	52.3	75.8	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	18.7	310.5	14.6	28.9	204.4	809.1	342.6	1 150.3	42.5	78.0	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	18.0	283.3	14.2	29.2	191.1	639.2	404.5	1 030.0	42.6	88.8	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	17.7	262.0	14.0	30.8	180.5	617.2	383.2	995.8	41.7	74.1	(NA)	(NA)
1977 Census ---	682	753	273	16.9	220.1	13.3	27.6	147.9	466.8	281.9	744.9	42.2	69.0	( <sup>10</sup> )	( <sup>10</sup> )
<b>INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.</b>															
1992 Census ---	260	273	99	12.7	415.3	7.8	15.3	189.0	871.4	999.7	1 869.5	78.9	375.8	87	88
1991 ASM-----	(NA)	(NA)	(NA)	12.4	363.0	7.7	14.8	163.2	714.3	918.4	1 681.6	74.6	305.1	(NA)	(NA)
1990 ASM-----	(NA)	(NA)	(NA)	13.7	379.3	8.8	16.3	186.2	881.3	1 001.3	1 681.6	67.8	398.9	(NA)	(NA)
1989 ASM-----	(NA)	(NA)	(NA)	13.6	373.4	8.8	16.8	182.2	805.7	957.9	1 755.4	84.8	377.4	(NA)	(NA)
1988 ASM-----	(NA)	(NA)	(NA)	14.2	378.9	9.5	18.1	185.0	839.5	925.4	1 757.2	101.8	414.5	(NA)	(NA)
1987 Census ---	238	252	99	13.8	353.2	8.9	16.8	180.9	728.2	802.1	1 510.1	58.2	393.7	84	83
1986 ASM-----	(NA)	(NA)	(NA)	14.8	366.4	9.6	17.6	184.5	741.6	791.3	1 538.0	53.2	399.3	(NA)	(NA)
1985 ASM-----	(NA)	(NA)	(NA)	14.5	347.6	9.5	17.4	186.1	782.3	743.5	1 533.9	59.6	423.0	(NA)	(NA)
1984 ASM-----	(NA)	(NA)	(NA)	9.9	227.0	6.7	12.7	137.9	662.4	670.1	1 301.3	52.8	342.8	(NA)	(NA)
1983 ASM-----	(NA)	(NA)	(NA)	8.4	200.0	5.9	11.2	120.7	427.6	592.0	1 025.0	26.9	350.7	(NA)	(NA)
1982 Census ---	238	249	80	8.2	173.4	5.6	10.6	101.4	313.5	595.2	938.1	51.7	369.6	87	82
1981 ASM-----	(NA)	(NA)	(NA)	10.3	208.7	7.0	14.2	122.5	456.1	815.8	1 285.3	48.8	293.3	(NA)	(NA)
1980 ASM-----	(NA)	(NA)	(NA)	9.5	171.6	6.7	14.1	105.8	417.0	818.9	1 228.7	37.4	273.1	(NA)	(NA)
1979 ASM-----	(NA)	(NA)	(NA)	9.5	160.7	6.7	13.9	97.7	432.5	783.1	1 181.1	35.8	243.1	(NA)	(NA)
1978 ASM-----	(NA)	(NA)	(NA)	10.2	156.1	7.7	15.6	100.9	367.7	521.9	879.7	38.1	172.3	(NA)	(NA)
1977 Census ---	406	427	119	9.0	124.4	6.9	13.9	81.2	296.5	454.9	750.6	27.3	149.2	94	70

<sup>1</sup>In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1977, see 1977 Census of Manufactures, vol. II, table 1 of the industry chapter.

<sup>2</sup>For the Census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>3</sup>Includes establishments with payroll at any time during the year.

<sup>4</sup>Beginning in 1982, all respondents were requested to report their inventories at cost or market prior to adjustment to LIFO cost. This is a change from prior years when respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, 1982 data for inventories and value added by manufacture are not comparable to prior-year data.

<sup>5</sup>Cost of materials is the sum of five components: the cost of (1) parts used in the manufacture of finished goods (materials, parts, containers, and supplies incorporated into products or otherwise directly consumed in the process); (2) purchased items later resold without further manufacture; (3) fuels; (4) electricity; and (5) commissions or fees to outside parties for contract manufacturing. A separate cost for each of the five components is shown in table 3a. Detailed data on materials consumed by type, are shown in table 7.

<sup>6</sup>Detailed data on new machinery and equipment expenditures are provided in table 3c.

<sup>7</sup>Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in the industry.

<sup>8</sup>Represents ratio of primary products shipped by establishments classified in industry to total shipments of such products by all manufacturing establishments, wherever classified.

<sup>9</sup>Prior year coverage ratio for an industry with products primary to more than one industry was recalculated and confined exclusively to that industry.

<sup>10</sup>Relationships are not meaningful because of the predominance of miscellaneous receipts, particularly receipts of contract and commission work on materials owned by others.

**Table 1b. Selected Operating Ratios for the Industry: 1992 and Earlier Years**

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

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
<b>INDUSTRY 3351, COPPER ROLLING AND DRAWING</b>									
1992 Census	32 069	77	2 269	12.91	75	85	76 894	42	44.17
1991 ASM	31 841	76	2 183	13.42	76	86	67 781	47	40.79
1990 ASM	30 972	76	2 184	12.94	76	86	78 472	39	47.17
1989 ASM	28 982	77	2 144	12.31	76	85	73 783	39	44.71
1988 ASM	27 684	77	2 149	11.88	75	85	80 347	34	48.34
1987 Census	26 066	78	2 091	11.36	70	82	71 248	37	43.76
1986 ASM	24 769	78	2 073	11.06	69	83	55 759	44	34.56
1985 ASM	23 116	76	2 018	10.64	71	85	47 375	49	30.76
1984 ASM	23 688	77	2 100	10.56	70	84	54 944	43	34.01
1983 ASM	22 421	75	1 982	10.55	69	82	52 158	43	35.08
1982 Census	20 094	74	1 895	9.90	69	84	41 103	49	29.38
1981 ASM	19 731	76	1 996	9.36	74	87	39 881	49	26.20
1980 ASM	18 506	76	2 030	8.58	77	89	35 748	52	23.14
1979 ASM	17 433	78	2 036	8.01	75	87	37 536	46	23.49
1978 ASM	15 417	78	2 073	7.14	73	85	35 114	44	21.77
1977 Census	14 553	77	2 087	6.71	75	87	31 109	47	19.28
<b>INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL</b>									
1992 Census	41 570	75	2 180	17.98	68	78	132 344	31	80.93
1991 ASM	40 149	74	2 136	17.84	73	82	103 606	39	65.64
1990 ASM	40 677	75	2 123	18.13	78	87	99 940	41	63.19
1989 ASM	38 638	75	2 114	17.17	82	90	72 556	53	45.70
1988 ASM	36 912	75	2 113	16.72	85	93	75 084	49	47.57
1987 Census	34 954	76	2 030	16.39	83	92	68 582	51	44.53
1986 ASM	34 109	76	1 946	16.88	75	85	83 899	41	56.43
1985 ASM	34 446	77	2 019	16.40	76	87	66 829	52	42.80
1984 ASM	33 996	78	1 981	16.73	79	89	63 974	53	41.37
1983 ASM	32 292	78	1 959	16.27	81	92	53 520	60	35.06
1982 Census	31 123	76	1 900	16.04	82	94	41 661	75	28.92
1981 ASM	29 706	77	1 984	14.65	82	92	59 178	50	38.65
1980 ASM	26 526	78	2 000	12.96	82	93	53 578	50	34.49
1979 ASM	23 827	79	2 041	11.54	78	88	54 728	44	33.97
1978 ASM	21 646	79	1 974	10.68	76	86	54 661	40	34.90
1977 Census	19 538	80	2 024	9.49	83	93	42 694	46	26.49
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS</b>									
1992 Census	26 844	77	2 173	10.66	63	82	53 672	50	32.10
1991 ASM	26 271	77	2 170	10.45	65	83	48 702	54	29.26
1990 ASM	25 663	77	2 155	10.36	69	85	47 472	54	28.59
1989 ASM	25 003	76	2 086	10.57	72	87	47 178	53	29.87
1988 ASM	24 683	76	2 157	10.24	71	85	50 540	49	30.69
1987 Census	24 124	77	2 128	10.09	68	85	45 756	53	28.09
1986 ASM	23 183	77	2 092	9.89	69	87	38 835	60	24.19
1985 ASM	21 959	78	2 084	9.52	67	85	40 337	54	24.82
1984 ASM	21 553	78	2 063	9.55	69	85	42 344	51	26.19
1983 ASM	20 708	77	2 035	9.29	72	89	35 215	59	22.39
1982 Census	19 646	76	1 969	9.06	67	85	33 831	58	22.61
1981 ASM	18 940	76	2 025	8.53	68	85	35 506	53	23.00
1980 ASM	17 127	76	1 986	7.98	67	84	34 486	50	22.72
1979 ASM	15 934	79	2 035	7.27	65	82	34 580	46	21.50
1978 ASM	14 425	80	2 053	6.49	67	84	29 154	49	17.75
1977 Census	13 430	80	2 075	6.00	68	85	25 608	52	15.42
<b>INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.</b>									
1992 Census	34 000	73	2 455	11.30	84	90	85 667	40	47.59
1991 ASM	31 077	69	2 444	9.86	84	91	69 308	45	40.95
1990 ASM	28 250	75	2 000	12.17	86	92	68 250	41	45.50
1989 ASM	25 444	67	2 167	12.00	87	93	56 000	45	38.77
1988 ASM	29 375	75	2 333	12.14	71	75	203 375	14	116.21
1987 Census	26 889	67	2 333	12.14	81	86	121 444	22	78.07
1986 ASM	30 294	76	2 077	13.11	78	87	72 176	42	45.44
1985 ASM	27 500	75	2 067	12.26	76	84	84 400	33	54.45
1984 ASM	29 474	79	1 933	13.45	78	84	87 737	34	57.48
1983 ASM	26 318	73	2 000	12.72	86	93	63 318	42	43.53
1982 Census	25 000	73	1 842	12.63	80	89	11 808	212	8.77
1981 ASM	24 143	76	1 973	11.38	68	77	100 122	24	67.21
1980 ASM	21 902	76	1 974	10.43	66	74	107 039	20	70.90
1979 ASM	21 137	76	2 026	9.87	71	80	75 255	28	48.58
1978 ASM	18 920	78	1 949	9.09	81	89	47 860	40	31.49
1977 Census	16 617	77	1 917	8.19	75	83	47 404	35	32.29
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.</b>									
1992 Census	34 081	67	2 075	14.96	54	74	74 613	46	53.77
1991 ASM	33 316	68	2 017	14.73	57	76	68 282	49	49.92
1990 ASM	32 909	67	2 065	14.57	57	74	80 780	41	58.69
1989 ASM	31 849	68	2 095	13.73	59	75	83 346	38	58.41
1988 ASM	30 380	66	2 098	12.93	61	78	74 908	41	53.84
1987 Census	29 480	66	2 136	12.24	62	79	66 363	44	47.14
1986 ASM	28 579	65	2 017	12.45	63	81	62 175	46	47.41
1985 ASM	26 889	62	1 992	12.13	63	80	57 481	47	46.23
1984 ASM	26 066	63	2 035	11.62	66	82	55 445	47	43.50
1983 ASM	24 672	63	1 892	11.46	69	83	55 545	44	46.25
1982 Census	23 610	63	1 905	10.99	67	81	49 665	48	41.39
1981 ASM	22 091	66	1 992	9.89	64	75	68 579	32	51.76
1980 ASM	20 719	69	2 029	9.04	67	77	68 360	30	48.86
1979 ASM	18 858	71	2 081	7.96	71	82	54 726	34	37.00
1978 ASM	16 495	71	2 047	7.17	75	86	41 538	40	28.64
1977 Census	15 128	70	2 058	6.43	77	87	33 081	46	23.04

**Table 1b. Selected Operating Ratios for the Industry: 1992 and Earlier Years—Con.**

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

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING</b>									
1992 Census	28 455	74	2 100	11.91	63	76	80 325	35	51.73
1991 ASM	27 587	73	2 060	11.90	63	76	75 536	37	49.98
1990 ASM	26 591	74	2 020	11.51	63	76	76 756	35	51.28
1989 ASM	25 575	76	2 035	10.95	64	76	75 595	34	49.02
1988 ASM	24 478	75	2 093	10.48	64	77	72 183	34	46.06
1987 Census	23 179	75	2 050	10.18	62	76	65 169	36	42.64
1986 ASM	22 924	75	2 029	10.00	63	78	56 098	41	36.82
1985 ASM	21 916	74	2 006	9.72	62	77	53 214	41	35.66
1984 ASM	21 317	75	1 988	9.55	64	80	50 536	42	33.67
1983 ASM	20 218	74	1 987	9.09	66	82	43 232	47	29.51
1982 Census	18 781	74	1 918	8.75	64	79	41 814	45	29.60
1981 ASM	17 970	75	2 028	8.01	67	81	44 911	40	29.42
1980 ASM	16 677	76	2 019	7.42	68	81	43 127	39	28.10
1979 ASM	15 575	77	2 075	6.80	67	80	41 389	38	26.02
1978 ASM	14 246	77	2 071	6.25	66	80	35 612	40	22.40
1977 Census	13 225	75	2 036	5.93	68	81	31 940	41	20.80
<b>INDUSTRY 3398, METAL HEAT TREATING</b>									
1992 Census	29 534	75	2 131	11.65	40	66	68 626	43	43.11
1991 ASM	27 558	75	2 161	11.02	32	63	60 020	46	37.09
1990 ASM	27 615	75	2 130	10.82	32	63	62 146	44	38.84
1989 ASM	26 961	76	2 108	10.46	35	65	58 246	46	36.43
1988 ASM	25 259	73	2 248	9.52	36	64	58 819	43	35.81
1987 Census	23 422	74	2 082	9.47	27	58	56 411	42	36.39
1986 ASM	22 145	77	2 091	9.14	30	59	52 339	42	32.56
1985 ASM	20 810	77	2 035	8.83	30	59	52 098	40	33.17
1984 ASM	20 761	76	2 044	9.03	37	64	51 022	41	32.80
1983 ASM	18 633	74	1 968	8.56	36	65	40 929	46	28.12
1982 Census	18 316	76	1 993	8.05	37	66	38 672	47	25.45
1981 ASM	18 045	79	2 000	7.52	31	58	49 000	37	31.15
1980 ASM	16 604	78	1 979	7.07	30	57	43 267	38	28.00
1979 ASM	15 739	79	2 056	6.54	39	67	35 511	44	21.89
1978 ASM	14 802	79	2 200	5.86	38	65	34 870	42	20.04
1977 Census	13 024	79	2 075	5.36	38	67	27 621	47	16.91
<b>INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.</b>									
1992 Census	32 701	61	1 962	12.35	53	76	68 614	48	56.95
1991 ASM	29 274	62	1 922	11.03	55	76	57 605	51	48.26
1990 ASM	27 686	64	1 852	11.42	54	74	64 328	43	54.07
1989 ASM	27 456	65	1 909	10.85	55	76	59 243	46	47.96
1988 ASM	26 683	67	1 905	10.22	53	74	59 120	45	46.38
1987 Census	25 594	64	1 888	10.77	53	77	52 768	49	43.35
1986 ASM	24 757	65	1 833	10.48	51	75	50 108	49	42.14
1985 ASM	23 972	66	1 832	10.70	48	71	53 952	44	44.96
1984 ASM	22 929	68	1 896	10.86	51	69	66 909	34	52.16
1983 ASM	23 810	70	1 898	10.78	58	77	50 905	47	38.18
1982 Census	21 146	68	1 893	9.57	63	82	38 232	55	29.58
1981 ASM	20 262	68	2 029	8.63	63	80	44 282	46	32.12
1980 ASM	18 063	71	2 104	7.50	67	81	43 895	41	29.57
1979 ASM	16 916	71	2 075	7.03	66	80	45 526	37	31.12
1978 ASM	15 304	75	2 026	6.47	59	77	36 049	42	23.57
1977 Census	13 822	77	2 014	5.84	61	77	32 944	42	21.33

Note: For qualifications of data, see footnotes on table 1a.

**Table 2. Industry Statistics for Selected States: 1992 and 1987**

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992											1987		
	E1	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees <sup>2</sup> (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number <sup>2</sup> (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
<b>INDUSTRY 3351, COPPER ROLLING AND DRAWING</b>														
<b>United States</b> -----		<b>115</b>	<b>86</b>	<b>18.9</b>	<b>606.1</b>	<b>14.5</b>	<b>32.9</b>	<b>424.6</b>	<b>1 453.3</b>	<b>4 487.1</b>	<b>6 000.1</b>	<b>126.8</b>	<b>22.6</b>	<b>1 610.2</b>
Alabama -----		4	3	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Arkansas -----		1	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
California -----		6	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.4	F	(D)
Connecticut -----		12	9	1.2	41.8	.9	1.9	27.8	104.5	171.3	274.6	5.5	1.9	107.7
Georgia -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Illinois -----		8	6	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Indiana -----		3	2	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Iowa -----		1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Kentucky -----		3	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Massachusetts -----		7	6	.3	9.3	.3	.5	6.5	23.8	27.2	50.2	1.3	E	(D)
Michigan -----		5	4	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.8	57.6
Mississippi -----		4	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Missouri -----		2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Jersey -----		6	5	.6	15.7	.5	2.0	11.1	30.0	51.9	80.1	.8	G	(D)
New York -----		7	5	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
North Carolina -----		5	4	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Ohio -----		5	5	.8	27.1	.5	1.2	16.8	83.5	242.8	324.7	6.8	1.3	126.0
Oklahoma -----		2	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Pennsylvania -----		12	11	2.7	84.7	1.9	4.0	55.3	155.1	409.5	574.9	9.7	3.0	186.9
South Carolina -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Texas -----		4	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Utah -----		1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Virginia -----		2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Wisconsin -----		5	4	1.2	42.2	.9	2.1	29.2	84.9	128.0	216.1	4.8	G	(D)
<b>INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL</b>														
<b>United States</b> -----		<b>63</b>	<b>44</b>	<b>24.4</b>	<b>1 014.3</b>	<b>18.3</b>	<b>39.9</b>	<b>717.4</b>	<b>3 229.2</b>	<b>7 273.1</b>	<b>10 648.7</b>	<b>418.3</b>	<b>26.1</b>	<b>1 790.0</b>
Alabama -----		3	3	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Arkansas -----		2	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
California -----		9	3	.6	17.2	.4	.9	11.8	55.9	126.3	183.6	3.8	.6	59.8
Colorado -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Connecticut -----		2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Illinois -----		3	2	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Indiana -----		3	3	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Iowa -----		2	2	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Kentucky -----		3	3	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.0
New Jersey -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
New York -----		3	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
North Carolina -----		2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Ohio -----		5	5	1.4	55.5	1.0	2.0	35.9	127.2	471.5	607.7	(D)	G	(D)
Pennsylvania -----		3	3	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
South Carolina -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Tennessee -----		4	4	2.1	89.3	1.6	3.7	70.5	472.2	716.6	1 215.4	(D)	(NA)	(D)
Texas -----		2	2	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Virginia -----		2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Washington -----		1	1	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
West Virginia -----		2	2	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS</b>														
<b>United States</b> -----		<b>193</b>	<b>153</b>	<b>25.6</b>	<b>687.2</b>	<b>19.7</b>	<b>42.8</b>	<b>456.4</b>	<b>1 374.0</b>	<b>2 358.7</b>	<b>3 735.6</b>	<b>150.0</b>	<b>30.7</b>	<b>1 404.7</b>
Alabama -----	E1	3	3	.4	8.5	.3	.5	5.0	19.6	32.9	51.8	(D)	(NA)	(D)
Arizona -----		6	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Arkansas -----		3	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California -----		30	21	2.3	69.7	1.8	3.9	46.7	120.7	250.3	372.1	6.6	4.4	183.0
Connecticut -----		1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Florida -----		6	5	1.1	26.5	.9	2.2	18.8	49.1	113.0	161.1	12.4	1.2	66.0
Georgia -----		9	7	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Illinois -----		6	5	1.0	24.8	.8	1.6	16.7	44.3	71.4	114.8	5.2	G	(D)
Indiana -----		15	12	2.4	69.5	1.9	3.7	48.0	167.5	231.2	409.1	5.7	(NA)	(D)
Kentucky -----		2	2	.5	14.9	.4	1.2	10.8	29.0	43.2	71.5	1.2	E	(D)
Louisiana -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Massachusetts -----		3	3	.1	3.1	.1	.2	2.6	4.3	11.2	15.6	(D)	E	(D)
Michigan -----		16	13	1.6	50.9	1.1	2.4	30.6	92.8	105.8	198.6	8.9	2.6	92.6
Minnesota -----		3	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Mississippi -----		4	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Missouri -----		4	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
New Jersey -----	E2	5	4	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	1.3	65.6
New York -----		6	5	1.5	47.7	1.1	2.6	34.1	103.2	155.7	258.3	(D)	G	(D)
North Carolina -----		7	7	.9	20.6	.7	1.7	12.8	11.7	135.7	145.7	3.7	F	(D)
Ohio -----	E1	21	19	2.0	51.1	1.6	3.6	34.6	115.4	182.5	298.0	6.6	2.3	101.1
Oregon -----		3	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Pennsylvania -----		7	5	1.4	42.7	1.1	2.3	29.1	99.0	160.6	254.1	(D)	G	(D)
South Carolina -----		3	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
South Dakota -----		1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Tennessee -----	E2	5	4	1.0	23.8	.8	1.6	16.1	61.7	115.4	179.5	2.1	F	(D)

See footnotes at end of table.

**Table 2. Industry Statistics for Selected States: 1992 and 1987—Con.**

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992											1987		
	E1	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees <sup>2</sup> (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number <sup>2</sup> (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS—Con.</b>														
Texas	—	11	6	1.1	30.3	.8	1.6	16.4	71.2	117.8	188.5	1.5	G	(D)
Utah	—	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Virginia	—	3	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Wisconsin	—	2	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
<b>INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.</b>														
United States	—	29	11	1.5	51.0	1.1	2.7	30.5	128.5	651.1	778.0	14.7	.9	109.3
Kentucky	—	2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
New Jersey	—	1	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Ohio	—	2	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.</b>														
United States	—	182	92	16.0	545.3	10.7	22.2	332.2	1 193.8	1 466.4	2 713.3	91.8	17.9	1 187.9
Alabama	—	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California	E3	10	3	.2	4.6	.1	.2	2.4	12.1	21.6	33.9	.6	(NA)	(D)
Connecticut	—	9	4	.7	25.9	.3	.8	13.3	49.9	54.2	107.6	1.7	.7	45.3
Florida	E1	9	1	.1	3.1	.1	.2	1.7	11.2	12.5	24.6	.8	(NA)	(NA)
Illinois	—	9	4	.8	23.9	.6	1.1	14.9	51.6	64.9	115.8	1.7	E	(D)
Indiana	—	4	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Louisiana	—	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Maine	—	1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Massachusetts	—	7	4	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.8	G	(D)
Michigan	E2	13	7	.4	12.4	.3	.7	7.8	26.7	53.4	79.5	2.2	E	(D)
Nevada	E2	3	2	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
New Jersey	—	14	8	.8	30.3	.5	1.0	15.7	64.9	77.1	144.0	(D)	.9	63.1
New York	E4	13	7	.8	27.3	.5	1.0	17.1	55.3	101.5	152.6	(D)	G	(D)
North Carolina	—	3	2	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Ohio	—	12	5	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	5.8	G	(D)
Oregon	—	2	2	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
Pennsylvania	E1	22	13	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	5.8	G	(D)
Rhode Island	—	9	4	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Tennessee	E1	4	3	.3	9.7	.2	.5	5.8	29.2	41.1	70.1	(D)	(NA)	(D)
Texas	—	8	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	(NA)	(NA)
Utah	—	1	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Washington	E4	5	4	.6	23.7	.4	.9	12.1	56.3	64.0	121.7	(D)	E	(D)
West Virginia	—	1	1	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING</b>														
United States	E1	528	354	60.6	1 724.4	44.8	94.1	1 120.3	4 867.7	8 229.1	13 106.7	364.2	64.9	4 229.5
Alabama	—	6	4	.6	13.5	.5	.9	9.3	34.1	147.6	183.8	(D)	.6	74.8
Arizona	E2	9	5	2.1	69.9	1.6	3.1	55.4	180.0	291.2	429.0	(D)	(NA)	(D)
Arkansas	E1	12	11	2.1	49.1	1.8	4.0	36.6	156.9	364.5	527.2	7.4	G	(D)
California	E3	60	27	2.9	72.2	2.1	4.1	44.4	134.5	302.3	439.7	10.8	3.3	194.7
Colorado	E3	3	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Connecticut	—	34	20	3.2	95.7	2.0	4.3	52.6	197.1	339.2	542.5	15.5	3.9	209.9
Delaware	—	2	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Florida	E4	8	3	.4	8.7	.3	.5	4.7	11.8	32.1	46.1	(D)	(NA)	(D)
Georgia	—	14	11	4.1	147.1	3.2	6.5	109.1	587.4	683.7	1 260.8	(D)	4.8	595.7
Illinois	E1	34	21	3.6	116.1	2.4	5.2	59.7	255.8	416.6	677.2	15.2	3.2	208.9
Indiana	—	27	23	4.6	129.7	3.5	7.4	91.6	433.4	863.6	1 302.8	21.6	5.3	341.3
Kansas	—	5	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Kentucky	—	11	10	1.9	54.3	1.5	3.2	38.8	208.9	352.9	565.7	14.4	G	(D)
Louisiana	—	2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Massachusetts	E4	46	35	3.5	111.9	2.5	5.3	67.4	247.9	357.6	606.1	10.0	5.1	261.0
Michigan	E4	10	6	.7	17.1	.6	1.1	12.2	42.5	44.7	87.5	(D)	1.0	63.8
Mississippi	E2	6	6	.9	21.7	.7	1.4	15.0	89.7	139.9	241.0	(D)	.9	61.6
Missouri	—	5	5	.6	15.4	.4	.8	9.5	54.9	189.2	244.6	3.7	F	(D)
Nebraska	—	3	2	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
New Hampshire	E2	13	9	G	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	G	(D)
New Jersey	E2	23	17	2.0	61.7	1.3	2.7	33.1	143.6	182.2	327.7	7.2	3.0	173.6
New York	E1	40	25	3.1	86.5	2.3	5.1	54.3	183.0	436.7	622.8	12.5	4.9	208.6
North Carolina	—	21	17	4.3	108.4	3.4	7.4	74.3	384.6	598.0	975.7	36.6	3.0	206.6
Ohio	E1	21	12	1.2	39.0	.9	2.1	25.4	91.3	176.4	272.7	6.6	G	(D)
Oklahoma	—	4	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)

See footnotes at end of table.



**Table 2. Industry Statistics for Selected States: 1992 and 1987—Con.**

[Excludes data for auxiliaries. States with 100 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1992											1987		
	E1	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees <sup>2</sup> (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number <sup>2</sup> (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING—Con.</b>														
Oregon .....	—	4	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Pennsylvania .....	E2	19	16	2.7	66.1	2.1	4.4	43.0	179.5	336.0	518.0	18.7	2.3	127.4
Rhode Island .....	E2	8	7	2.7	66.9	2.1	4.0	45.9	192.8	275.4	497.2	4.3	4.1	176.6
South Carolina .....	—	6	6	1.7	45.1	1.3	2.8	28.2	106.8	196.4	304.3	18.9	G	(D)
Tennessee .....	—	5	4	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Texas .....	E3	33	23	3.5	85.0	2.5	5.2	51.2	225.5	406.1	625.6	12.0	(NA)	(D)
Utah .....	—	3	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Vermont .....	E3	7	4	.7	17.7	.5	1.3	10.4	51.4	52.2	103.1	(D)	.7	25.5
Virginia .....	—	7	5	1.2	34.2	.9	1.8	21.5	97.2	120.6	209.6	5.7	G	(D)
Washington .....	E9	7	1	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
West Virginia .....	—	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Wisconsin .....	E1	3	2	.2	4.8	.1	.2	2.5	9.5	18.1	27.7	.6	(NA)	(NA)
<b>INDUSTRY 3398, METAL HEAT TREATING</b>														
<b>United States .....</b>	<b>E1</b>	<b>731</b>	<b>299</b>	<b>17.4</b>	<b>513.9</b>	<b>13.0</b>	<b>27.7</b>	<b>322.7</b>	<b>1 194.1</b>	<b>772.4</b>	<b>1 952.4</b>	<b>66.9</b>	<b>18.0</b>	<b>1 015.4</b>
Alabama .....	—	6	2	.2	5.3	.2	.3	3.9	7.9	21.6	33.1	(D)	(NA)	(NA)
Arizona .....	—	10	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California .....	E1	79	35	1.7	49.7	1.3	2.8	31.6	101.5	32.0	134.4	5.4	2.0	106.1
Connecticut .....	E1	33	11	.7	22.3	.5	1.1	13.5	48.5	33.4	82.3	(D)	F	(D)
Florida .....	—	7	3	.1	4.0	.1	.3	2.9	8.1	2.6	10.9	(D)	(NA)	(NA)
Illinois .....	E2	47	24	1.3	34.2	1.0	2.1	22.4	80.3	49.9	129.2	5.4	G	(D)
Indiana .....	—	39	19	1.4	47.9	.9	1.8	24.1	163.3	117.1	280.0	6.6	F	(D)
Kentucky .....	E8	5	4	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Massachusetts .....	—	21	8	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Michigan .....	E1	105	50	2.9	89.3	2.1	4.6	56.5	209.3	63.2	271.7	10.2	3.3	185.2
Minnesota .....	—	12	8	.3	9.2	.2	.5	6.0	17.9	5.4	23.1	(D)	F	(D)
Missouri .....	—	8	4	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
New Jersey .....	E3	20	8	.4	12.8	.3	.7	7.6	29.5	9.8	39.3	1.1	F	(D)
New York .....	—	28	11	.4	12.8	.3	.7	7.6	32.9	8.0	41.0	2.3	1.4	130.9
North Carolina .....	E6	16	2	.3	7.7	.2	.5	4.4	19.3	8.8	28.4	1.1	(NA)	(D)
Ohio .....	—	87	33	2.5	69.6	1.9	4.0	46.2	104.1	210.9	312.5	10.1	2.1	115.5
Oklahoma .....	—	7	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.5	(NA)
Oregon .....	—	7	1	.1	3.3	.1	.2	2.1	9.2	2.3	11.2	.3	(NA)	(NA)
Pennsylvania .....	—	46	14	1.1	34.9	.8	1.6	22.1	83.9	107.8	188.6	3.8	.6	24.7
Tennessee .....	—	12	5	.2	5.7	.2	.4	3.6	17.0	3.9	20.8	(D)	.2	10.8
Texas .....	E2	52	21	1.2	30.7	.9	1.8	19.3	77.9	31.1	108.0	2.0	F	(D)
Wisconsin .....	E1	28	16	.7	21.1	.5	1.1	12.9	47.5	12.3	58.3	(D)	F	(D)
<b>INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.</b>														
<b>United States .....</b>	<b>E1</b>	<b>273</b>	<b>99</b>	<b>12.7</b>	<b>415.3</b>	<b>7.8</b>	<b>15.3</b>	<b>189.0</b>	<b>871.4</b>	<b>999.7</b>	<b>1 869.5</b>	<b>78.9</b>	<b>13.8</b>	<b>728.2</b>
Alabama .....	—	5	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
California .....	E3	24	7	.4	12.2	.2	.5	4.6	28.3	27.6	55.6	1.7	F	(D)
Connecticut .....	—	9	2	.2	5.7	.1	.3	3.8	11.3	6.4	17.3	(D)	(NA)	(D)
Illinois .....	—	6	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Indiana .....	E1	12	7	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	F	(D)
Kentucky .....	—	4	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Maryland .....	E7	4	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Massachusetts .....	E1	10	7	H	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Michigan .....	E2	21	7	.4	10.1	.2	.5	5.5	13.1	20.8	34.9	.8	.4	20.1
Minnesota .....	—	6	2	.1	2.9	.1	.2	1.9	3.1	11.0	14.3	(D)	(NA)	(NA)
Mississippi .....	—	2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri .....	E9	4	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nevada .....	—	2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Jersey .....	—	17	8	.8	29.6	.5	.9	14.1	71.7	100.9	171.1	13.1	F	(D)
New York .....	—	16	8	.5	17.7	.3	.7	9.8	62.8	124.4	185.4	8.1	F	(D)
North Carolina .....	—	6	4	.4	9.8	.3	.5	5.1	37.9	47.6	84.4	.7	(NA)	(NA)
Ohio .....	E4	18	9	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	4.4	F	(D)
Pennsylvania .....	—	35	15	2.2	73.9	1.5	3.1	40.2	133.9	203.9	343.4	13.4	2.1	72.8
Tennessee .....	E2	7	2	.2	5.1	.1	.3	2.6	7.2	20.5	27.3	(D)	.5	18.8
Texas .....	—	12	3	.2	6.7	.2	.3	4.2	40.7	26.9	67.3	.5	(NA)	(D)

Note: For qualifications of data, see footnotes on table 1a.

<sup>1</sup>Payroll and sales data for some 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 the items shown 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 for those States where estimated value of shipments data based on administrative-record data account for 10 percent or more of figure shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

<sup>2</sup>Statistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 100 employees or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: 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.

**Table 3a. Summary Statistics for the Industry: 1992**

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

Item	Copper rolling and drawing (SIC 3351)	Aluminum sheet, plate, and foil (SIC 3353)	Aluminum extruded products (SIC 3354)	Aluminum rolling and drawing, n.e.c. (SIC 3355)	Nonferrous rolling and drawing, n.e.c. (SIC 3356)	Nonferrous wire-drawing and insulating (SIC 3357)	Metal heat treating (SIC 3398)	Primary metal products, n.e.c. (SIC 3399)
Companies ..... number..	88	45	134	27	159	379	634	260
All establishments..... number..	115	63	193	29	182	528	731	273
With 1 to 19 employees..... number..	29	19	40	18	90	174	432	174
With 20 to 99 employees..... number..	38	7	68	8	58	169	278	79
With 100 employees or more..... number..	48	37	85	3	34	185	21	20
Employment and labor costs:								
Employees.....1,000..	18.9	24.4	25.6	1.5	16.0	60.6	17.4	12.7
Compensation, total.....mil dol..	803.8	1 373.2	899.1	60.9	703.9	2 239.4	624.9	531.5
Annual payroll.....mil dol..	606.1	1 014.3	687.2	51.0	545.3	1 724.4	513.9	415.3
Fringe benefits.....mil dol..	197.7	358.9	211.9	9.9	158.6	515.0	111.0	116.1
Social Security and other legally required payments.....mil dol..	72.8	97.1	80.1	5.4	57.9	189.0	56.5	46.0
Employer voluntary payments.....mil dol..	124.8	261.8	131.8	4.5	100.7	326.1	54.4	70.1
Production workers:								
Average for year.....1,000..	14.5	18.3	19.7	1.1	10.7	44.8	13.0	7.8
March.....1,000..	14.3	18.3	19.3	1.1	10.9	44.7	13.1	7.8
May.....1,000..	14.3	18.4	19.8	1.1	10.8	44.5	13.2	7.9
August.....1,000..	14.8	18.3	20.1	1.1	10.6	44.8	13.0	7.9
November.....1,000..	14.6	18.1	19.7	1.1	10.6	45.1	12.7	7.7
Hours.....millions..	32.9	39.9	42.8	2.7	22.2	94.1	27.7	15.3
Wages.....mil dol..	424.6	717.4	456.4	30.5	332.2	1 120.3	322.7	189.0
Cost of materials <sup>1</sup> .....mil dol..	4 487.1	7 273.1	2 358.7	651.1	1 466.4	8 229.1	772.4	999.7
Materials, parts, containers, etc., consumed <sup>2</sup> .....mil dol..	4 252.7	6 590.2	2 135.4	628.0	1 280.3	7 747.2	602.4	864.8
Resales.....mil dol..	51.7	(D)	28.7	(D)	36.1	250.8	3.2	38.8
Fuels.....mil dol..	46.2	143.9	64.8	6.9	30.0	39.4	59.4	19.0
Purchased electricity.....mil dol..	105.2	179.6	72.6	8.7	62.7	161.3	75.1	47.2
Contract work.....mil dol..	31.2	(D)	57.3	(D)	57.2	30.3	32.3	29.9
Quantity of electric energy used for heat and power:								
Purchased.....mil kWh..	2 073.9	4 587.7	1 297.4	163.2	1 351.1	2 776.8	1 115.3	769.9
Generated less sold.....mil kWh..	-	-	-	-	(D)	(D)	-	-
Total value of shipments.....mil dol..	6 000.1	10 648.7	3 735.6	778.0	2 713.3	13 106.7	1 952.4	1 869.5
Value added.....mil dol..	1 453.3	3 229.2	1 374.0	128.5	1 193.8	4 867.7	1 194.1	871.4
Inventories by stage of fabrication:								
Beginning of 1992.....mil dol..	708.0	1 670.6	416.0	62.1	858.9	1 756.8	215.8	364.4
Finished goods.....mil dol..	155.6	422.3	87.8	31.8	125.2	806.6	58.5	109.2
Work in process.....mil dol..	379.9	914.1	126.1	18.8	484.2	503.9	55.0	135.9
Materials and supplies.....mil dol..	172.6	334.3	202.2	11.4	249.5	446.4	102.3	119.3
End of 1992.....mil dol..	690.8	1 517.1	414.3	67.1	789.2	1 741.8	229.8	375.8
Finished goods.....mil dol..	145.9	359.2	86.6	36.8	107.8	831.9	63.5	121.1
Work in process.....mil dol..	329.8	830.8	124.3	15.5	448.5	468.8	64.2	125.7
Materials and supplies.....mil dol..	215.1	327.1	203.4	14.9	232.9	441.1	102.1	129.0

Note: For qualifications of data, see footnotes on table 1a.

<sup>1</sup>Data on purchased services for the repair of buildings and machinery and for communication services are not included in cost of materials, etc., but are shown in table 3c.

<sup>2</sup>Data on materials consumed by type are shown in table 7. Data on amount purchased or transferred from foreign sources are shown in table 3c.

**Table 3b. Gross Book Value of Depreciable Assets, Capital Expenditures, Retirements, Depreciation, and Rental Payments: 1992**

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

Item	Copper rolling and drawing (SIC 3351)	Aluminum sheet, plate, and foil (SIC 3353)	Aluminum extruded products (SIC 3354)	Aluminum rolling and drawing, n.e.c. (SIC 3355)	Nonferrous rolling and drawing, n.e.c. (SIC 3356)	Nonferrous wire-drawing and insulating (SIC 3357)	Metal heat treating (SIC 3398)	Primary metal products, n.e.c. (SIC 3399)
Gross book value of depreciable assets:								
Total:								
Beginning of year.....	1 796.5	7 234.7	1 543.4	136.5	1 584.4	4 179.9	1 102.3	1 066.7
New capital expenditures <sup>1</sup> .....	126.8	418.3	150.0	14.7	91.8	364.2	66.9	78.9
Used capital expenditures.....	(D)	(D)	8.1	.7	5.4	45.9	10.2	6.7
Retirements.....	(D)	(D)	26.6	.7	28.3	105.5	18.5	27.2
End of year.....	1 947.8	7 552.4	1 674.9	151.3	1 653.3	4 484.6	1 160.9	1 125.0
Buildings and other structures:								
Beginning of year.....	290.3	1 217.5	343.5	28.8	303.8	891.1	202.8	273.2
New capital expenditures.....	15.0	46.0	27.3	1.7	11.1	52.0	8.3	13.4
Used capital expenditures.....	(D)	(D)	.7	.1	3.0	2.8	1.0	.6
Retirements.....	(D)	(D)	1.4	(Z)	.4	13.3	1.2	1.9
End of year.....	313.4	1 213.1	370.2	30.6	317.4	932.5	210.9	285.3
Machinery and equipment:								
Beginning of year.....	1 506.2	6 017.2	1 199.9	107.7	1 280.6	3 288.9	899.5	793.4
New capital expenditures <sup>1</sup> .....	111.7	372.3	122.7	13.0	80.7	312.2	58.6	65.5
Used capital expenditures.....	(D)	(D)	7.3	.6	2.4	43.1	9.2	6.1
Retirements.....	(D)	(D)	25.2	.7	27.9	92.1	17.2	25.3
End of year.....	1 634.5	6 339.3	1 304.7	120.6	1 335.9	3 552.1	950.1	839.7
Depreciation charges during 1992:								
Total.....	97.2	384.3	142.3	8.4	82.2	265.4	69.0	158.2
Buildings and other structures.....	10.7	41.4	27.3	.9	9.9	34.7	8.9	57.6
Machinery and equipment.....	86.5	342.9	115.1	7.4	72.2	230.7	60.1	100.5
Rental payments:								
Total.....	23.3	21.6	19.4	2.7	14.6	73.4	26.9	18.3
Buildings and other structures.....	11.9	6.3	8.0	2.2	8.4	46.7	14.3	9.3
Machinery and equipment.....	11.4	15.3	11.4	.4	6.2	26.6	12.6	9.0

<sup>1</sup>Data on new machinery and equipment expenditures by type are provided in table 3c.

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**MANUFACTURES—INDUSTRY SERIES**

**Table 3c. Supplemental Industry Statistics Based on Sample Estimates: 1992**

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

Item	Copper rolling and drawing (SIC 3351)		Aluminum sheet, plate, and foil (SIC 3353)		Aluminum extruded products (SIC 3354)		Aluminum rolling and drawing, n.e.c. (SIC 3355)	
	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)
<b>Purchased services:</b>								
Cost of purchased services for the repair of—								
Buildings and other structures -----	10.4	(X)	25.0	(X)	4.4	(X)	.2	(X)
Response coverage ratio (percent) <sup>2</sup> -----	95.2	(X)	97.1	(X)	86.8	(X)	72.4	(X)
Machinery -----	64.8	(X)	180.5	(X)	54.4	(X)	2.4	(X)
Response coverage ratio (percent) <sup>2</sup> -----	96.7	(X)	99.4	(X)	92.8	(X)	72.4	(X)
<b>Other purchased services:</b>								
Communications -----	6.6	(X)	6.8	(X)	7.1	(X)	.3	(X)
Response coverage ratio (percent) <sup>2</sup> -----	91.8	(X)	82.9	(X)	91.8	(X)	72.4	(X)
Legal -----	5.7	(X)	9.2	(X)	2.5	(X)	.5	(X)
Response coverage ratio (percent) <sup>2</sup> -----	97.4	(X)	81.6	(X)	91.1	(X)	72.4	(X)
Accounting and bookkeeping -----	2.8	(X)	2.4	(X)	3.2	(X)	.1	(X)
Response coverage ratio (percent) <sup>2</sup> -----	86.1	(X)	83.2	(X)	90.7	(X)	72.4	(X)
Advertising -----	1.2	(X)	.3	(X)	2.0	(X)	(Z)	(X)
Response coverage ratio (percent) <sup>2</sup> -----	92.8	(X)	79.3	(X)	91.1	(X)	72.4	(X)
Software and other data processing -----	1.8	(X)	6.9	(X)	2.4	(X)	.1	(X)
Response coverage ratio (percent) <sup>2</sup> -----	95.6	(X)	86.6	(X)	94.9	(X)	72.4	(X)
Refuse removal, including hazardous waste -----	11.9	(X)	14.6	(X)	5.5	(X)	.2	(X)
Response coverage ratio (percent) <sup>2</sup> -----	90.2	(X)	99.4	(X)	94.9	(X)	72.4	(X)
<b>New machinery and equipment expenditures -----</b>								
Automobiles, trucks, etc., for highway use -----	111.7	(X)	372.3	(X)	122.7	(X)	13.0	(X)
Computers and peripheral data processing equipment -----	1.7	16	1.6	1	1.6	33	(S)	(X)
All other -----	4.7	6	18.1	1	4.6	4	(S)	(X)
Adjustment ratio <sup>3</sup> -----	105.3	1	352.6	1	116.5	1	(S)	(X)
	.9	(X)	1.0	(X)	1.2	(X)	(S)	(X)
<b>Cost of materials, components, parts, etc., used -----</b>								
Materials purchased or transferred from foreign sources <sup>4</sup> -----	4 252.7	(X)	6 590.2	(X)	2 135.4	(X)	628.0	(X)
Materials purchased or transferred from domestic sources -----	354.4	10	1 335.2	2	221.4	6	42.6	3
Adjustment ratio <sup>3</sup> -----	3 898.3	1	5 255.0	1	1 914.0	1	585.4	1
	1.4	(X)	1.7	(X)	1.3	(X)	1.3	(X)
Item	Nonferrous rolling and drawing, n.e.c. (SIC 3356)		Nonferrous wire drawing and insulating (SIC 3357)		Metal heat treating (SIC 3398)		Primary metal products, n.e.c. (SIC 3399)	
	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)	Amount (million dollars)	Relative standard error of estimate <sup>1</sup> (percent)
<b>Purchased services:</b>								
Cost of purchased services for the repair of—								
Buildings and other structures -----	4.3	(X)	11.0	(X)	6.7	(X)	2.0	(X)
Response coverage ratio (percent) <sup>2</sup> -----	81.0	(X)	68.3	(X)	82.9	(X)	87.7	(X)
Machinery -----	24.8	(X)	59.3	(X)	39.8	(X)	13.1	(X)
Response coverage ratio (percent) <sup>2</sup> -----	85.6	(X)	69.9	(X)	82.9	(X)	87.5	(X)
<b>Other purchased services:</b>								
Communications -----	5.4	(X)	13.8	(X)	3.9	(X)	3.8	(X)
Response coverage ratio (percent) <sup>2</sup> -----	86.5	(X)	68.9	(X)	80.0	(X)	88.2	(X)
Legal -----	4.3	(X)	5.5	(X)	5.8	(X)	4.5	(X)
Response coverage ratio (percent) <sup>2</sup> -----	85.6	(X)	65.1	(X)	82.9	(X)	84.8	(X)
Accounting and bookkeeping -----	2.9	(X)	7.4	(X)	4.2	(X)	.9	(X)
Response coverage ratio (percent) <sup>2</sup> -----	84.7	(X)	63.2	(X)	79.8	(X)	87.6	(X)
Advertising -----	5.1	(X)	6.9	(X)	2.0	(X)	2.7	(X)
Response coverage ratio (percent) <sup>2</sup> -----	85.6	(X)	64.3	(X)	80.4	(X)	87.7	(X)
Software and other data processing -----	7.1	(X)	11.0	(X)	1.6	(X)	1.0	(X)
Response coverage ratio (percent) <sup>2</sup> -----	85.1	(X)	64.8	(X)	81.9	(X)	88.2	(X)
Refuse removal, including hazardous waste -----	8.9	(X)	10.3	(X)	4.5	(X)	2.1	(X)
Response coverage ratio (percent) <sup>2</sup> -----	87.4	(X)	70.5	(X)	82.9	(X)	87.5	(X)
<b>New machinery and equipment expenditures -----</b>								
Automobiles, trucks, etc., for highway use -----	80.7	(X)	312.2	(X)	58.6	(X)	65.5	(X)
Computers and peripheral data processing equipment -----	.3	4	2.7	12	4.4	38	.1	54
All other -----	7.9	3	11.3	6	1.9	19	1.3	26
Adjustment ratio <sup>3</sup> -----	72.5	1	298.2	1	52.3	5	64.1	1
	1.3	(X)	1.3	(X)	1.5	(X)	1.3	(X)
<b>Cost of materials, components, parts, etc., used -----</b>								
Materials purchased or transferred from foreign sources <sup>4</sup> -----	1 280.3	(X)	7 747.2	(X)	602.4	(X)	864.8	(X)
Materials purchased or transferred from domestic sources -----	141.4	5	463.8	5	59.4	13	65.2	26
Adjustment ratio <sup>3</sup> -----	1 138.9	1	7 283.4	1	543.0	2	799.7	3
	1.6	(X)	1.9	(X)	1.9	(X)	1.7	(X)

Note: The amounts shown for purchased services reflect only those services that establishments purchase from other companies. Amounts purchased by separate central administrative offices and services provided to establishments by central administrative offices are excluded.

<sup>1</sup>For description of relative standard error of estimate, see Qualifications of the Data in appendixes.

<sup>2</sup>A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight, see appendix B) for those ASM establishments that reported to the weighted total employment for all ASM establishments classified in the industry.

<sup>3</sup>Detail has been adjusted upwards to account for nonresponse. Inverse of the ratio shown represents a measure of the response of the inquiry. (See appendixes for further explanation.)

<sup>4</sup>Data may understate the true cost of imported parts, components, and supplies since some respondents do not know the origin of these materials. Includes cases where materials were purchased from secondary suppliers or where they were transferred from company-operated warehouses or other distribution points. Direct purchases from foreign suppliers and importers by domestic manufacturing establishments are believed to be reported accurately.

**Table 4. Industry Statistics by Employment Size of Establishment: 1992**

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

Industry and employment size class	E <sup>1</sup>	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
<b>INDUSTRY 3351, COPPER ROLLING AND DRAWING</b>												
<b>Total</b> .....	-	<b>115</b>	<b>18.9</b>	<b>606.1</b>	<b>14.5</b>	<b>32.9</b>	<b>424.6</b>	<b>1 453.3</b>	<b>4 487.1</b>	<b>6 000.1</b>	<b>126.8</b>	<b>690.8</b>
Establishments with an average of—												
1 to 4 employees .....	E9	13	(Z)	.4	(Z)	(Z)	.3	.8	2.7	3.5	.1	.4
5 to 9 employees .....	E6	11		2.3	.1	.1	1.5	4.3	10.8	15.8	2.3	1.8
10 to 19 employees .....	E7	5		1.7	(Z)	.1	1.0	5.2	5.5	10.5	(D)	.9
20 to 49 employees .....	E1	23		23.4	.6	1.2	14.5	52.0	132.0	184.9	2.4	26.3
50 to 99 employees .....	-	15		32.2	.8	1.8	23.0	110.0	206.0	314.3	11.5	31.4
100 to 249 employees .....	-	24		3.9	126.5	2.9	6.3	84.3	362.1	1 322.2	40.1	135.7
250 to 499 employees .....	-	16		5.7	174.0	4.5	10.7	123.4	294.1	1 581.3	27.8	212.9
500 to 999 employees .....	-	7		7.3	245.5	5.6	12.6	176.6	624.8	1 226.5	42.6	281.3
1,000 to 2,499 employees .....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	13	(Z)	.8	(Z)	(Z)	.6	.9	3.2	4.1	.1	.5
<b>INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL</b>												
<b>Total</b> .....	-	<b>63</b>	<b>24.4</b>	<b>1 014.3</b>	<b>18.3</b>	<b>39.9</b>	<b>717.4</b>	<b>3 229.2</b>	<b>7 273.1</b>	<b>10 648.7</b>	<b>418.3</b>	<b>1 517.1</b>
Establishments with an average of—												
1 to 4 employees .....	E2	12	(Z)	.6	(Z)	(Z)	.5	1.2	5.3	6.5	.4	1.3
5 to 9 employees .....	-	3	(Z)	.8	(Z)	(Z)	.6	2.0	5.7	7.7	.8	1.5
10 to 19 employees .....	-	4		2.1	(Z)	.1	1.2	3.6	20.9	24.1	(D)	3.0
20 to 49 employees .....	-	4		5.5	.1	.2	3.5	15.2	37.0	51.5	2.1	7.4
50 to 99 employees .....	-	3		8.3	.2	.4	5.7	26.9	113.2	140.7	4.4	12.4
100 to 249 employees .....	-	14		2.4	92.2	1.8	3.7	62.4	229.7	771.8	1 000.9	26.8
250 to 499 employees .....	-	9		2.9	99.2	2.3	4.9	73.5	268.5	665.1	947.9	27.7
500 to 999 employees .....	-	7		5.5	237.4	3.9	8.3	161.3	744.2	2 066.4	2 810.2	122.5
1,000 to 2,499 employees .....	-	5		13.1	568.0	9.9	22.3	408.7	1 938.0	3 587.7	5 659.3	860.8
2,500 employees or more .....	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	11	(Z)	.5	(Z)	(Z)	.4	1.0	4.2	5.2	.3	1.0
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS</b>												
<b>Total</b> .....	-	<b>193</b>	<b>25.6</b>	<b>687.2</b>	<b>19.7</b>	<b>42.8</b>	<b>456.4</b>	<b>1 374.0</b>	<b>2 358.7</b>	<b>3 735.6</b>	<b>150.0</b>	<b>414.3</b>
Establishments with an average of—												
1 to 4 employees .....	E9	20	(Z)	.8	(Z)	.1	.5	1.4	2.9	4.3	.1	.6
5 to 9 employees .....	E8	9		1.4	(Z)	.1	1.0	2.5	5.2	7.6	.2	1.0
10 to 19 employees .....	E3	11		4.1	.1	.2	2.3	10.4	19.8	30.3	.4	2.9
20 to 49 employees .....	E2	29		1.0	25.6	.7	1.4	14.7	50.5	105.9	5.3	15.4
50 to 99 employees .....	-	39		2.7	63.4	2.0	4.4	41.8	83.1	256.0	7.6	40.9
100 to 249 employees .....	-	52		8.7	231.4	6.5	14.4	147.5	446.6	838.7	1 285.0	40.4
250 to 499 employees .....	-	29		13.0	360.5	10.3	24.7	248.7	779.5	1 130.3	1 914.0	56.3
500 to 999 employees .....	-	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	39.7
1,000 to 2,499 employees .....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	26		1.7	.1	.1	1.2	2.9	6.0	8.9	.2	1.2
<b>INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.</b>												
<b>Total</b> .....	-	<b>29</b>	<b>1.5</b>	<b>51.0</b>	<b>1.1</b>	<b>2.7</b>	<b>30.5</b>	<b>128.5</b>	<b>651.1</b>	<b>778.0</b>	<b>14.7</b>	<b>67.1</b>
Establishments with an average of—												
1 to 4 employees .....	E9	6	(Z)	.3	(Z)	(Z)	.2	.9	4.0	4.8	.6	.9
5 to 9 employees .....	E7	9		1.5	(Z)	.1	.8	3.1	12.6	15.7	1.9	2.7
10 to 19 employees .....	E9	3	(Z)	.9	(Z)	.1	.5	3.1	14.2	17.3	2.2	3.2
20 to 49 employees .....	E3	4		3.0	.1	.2	2.2	11.5	46.8	54.9	2.9	9.3
50 to 99 employees .....	E2	4		9.0	.2	.5	6.4	22.1	49.1	70.7	(D)	9.8
100 to 249 employees .....	-	1		1.0	36.3	.7	1.9	20.3	87.8	524.4	614.6	41.3
250 to 499 employees .....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
500 to 999 employees .....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	5	(Z)	.4	(Z)	(Z)	.2	.6	2.6	3.2	.4	.6
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.</b>												
<b>Total</b> .....	-	<b>182</b>	<b>16.0</b>	<b>545.3</b>	<b>10.7</b>	<b>22.2</b>	<b>332.2</b>	<b>1 193.8</b>	<b>1 466.4</b>	<b>2 713.3</b>	<b>91.8</b>	<b>789.2</b>
Establishments with an average of—												
1 to 4 employees .....	E9	39		2.7	.1	.1	1.7	7.1	7.8	15.0	.5	3.8
5 to 9 employees .....	E7	20		4.0	.1	.2	2.5	8.7	9.3	18.1	.7	4.1
10 to 19 employees .....	E1	31		12.9	.3	.7	7.7	34.5	46.4	80.5	2.2	18.0
20 to 49 employees .....	E3	34		33.6	.8	1.6	18.0	73.1	142.5	216.8	7.1	34.5
50 to 99 employees .....	-	24		1.7	50.5	1.2	2.5	29.7	99.2	308.6	6.6	68.5
100 to 249 employees .....	E2	15		2.4	76.2	1.5	3.2	40.3	176.1	394.7	8.5	60.9
250 to 499 employees .....	-	14		5.1	179.7	3.6	7.6	111.3	379.3	901.6	41.1	318.7
500 to 999 employees .....	-	3		5.0	185.7	3.2	6.4	120.9	415.9	777.9	25.2	280.8
1,000 to 2,499 employees .....	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	45		4.4	.1	.2	2.7	9.7	10.6	20.3	.7	5.2

See footnotes at end of table.

**Table 4. Industry Statistics by Employment Size of Establishment: 1992—Con.**

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

Industry and employment size class	E <sup>1</sup>	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING</b>												
<b>Total</b> .....	<b>E1</b>	<b>528</b>	<b>60.6</b>	<b>1 724.4</b>	<b>44.8</b>	<b>94.1</b>	<b>1 120.3</b>	<b>4 867.7</b>	<b>8 229.1</b>	<b>13 106.7</b>	<b>364.2</b>	<b>1 741.8</b>
Establishments with an average of—												
1 to 4 employees .....	E7	76	.1	3.4	.1	.2	2.1	11.0	15.6	25.4	.5	4.5
5 to 9 employees .....	E5	46	.3	8.2	.2	.4	4.9	19.8	29.0	48.3	1.7	6.3
10 to 19 employees .....	E3	52	.8	20.5	.5	1.0	11.0	55.1	69.1	124.9	1.8	13.6
20 to 49 employees .....	E1	79	2.6	68.5	1.8	3.9	38.3	198.7	302.9	502.6	8.7	68.2
50 to 99 employees .....	E1	90	6.5	172.5	4.7	9.9	104.1	491.0	840.9	1 332.3	36.1	166.3
100 to 249 employees .....	E2	113	17.9	492.8	13.4	28.5	321.1	1 275.0	2 889.7	4 172.3	105.2	553.4
250 to 499 employees .....	E1	57	18.3	481.9	13.7	28.4	317.7	1 283.6	2 523.5	3 848.3	92.6	544.9
500 to 999 employees .....	—	10	6.5	196.9	4.8	9.9	136.3	561.1	798.3	1 363.9	117.6	165.8
1,000 to 2,499 employees .....	—	4	7.6	279.7	5.5	11.8	184.7	972.3	760.2	1 688.6	(D)	218.8
2,500 employees or more .....	—	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	77	.2	4.3	.1	.3	2.8	9.9	17.7	27.6	.6	3.7
<b>INDUSTRY 3398, METAL HEAT TREATING</b>												
<b>Total</b> .....	<b>E1</b>	<b>731</b>	<b>17.4</b>	<b>513.9</b>	<b>13.0</b>	<b>27.7</b>	<b>322.7</b>	<b>1 194.1</b>	<b>772.4</b>	<b>1 952.4</b>	<b>66.9</b>	<b>229.8</b>
Establishments with an average of—												
1 to 4 employees .....	E8	127	.3	7.8	.2	.5	5.0	20.0	7.1	27.2	1.1	2.2
5 to 9 employees .....	E3	129	.9	23.6	.7	1.5	15.4	55.2	17.2	72.4	2.9	5.0
10 to 19 employees .....	E1	176	2.5	68.9	1.8	4.0	41.5	156.3	44.2	200.6	6.5	17.3
20 to 49 employees .....	—	219	6.6	190.1	4.9	10.6	119.8	434.6	134.5	567.8	26.4	50.8
50 to 99 employees .....	E2	59	3.9	113.3	2.9	6.3	73.1	269.1	126.8	384.6	16.3	59.3
100 to 249 employees .....	E2	17	2.1	62.1	1.7	3.4	42.0	146.0	107.1	256.3	13.8	35.3
250 to 499 employees .....	—	4	1.2	48.1	.8	1.4	26.0	112.8	335.6	443.5	(D)	59.9
Covered by administrative records <sup>2</sup> .....	E9	158	.5	12.7	.4	.8	7.9	30.5	9.9	40.4	1.9	3.2
<b>INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.</b>												
<b>Total</b> .....	<b>E1</b>	<b>273</b>	<b>12.7</b>	<b>415.3</b>	<b>7.8</b>	<b>15.3</b>	<b>189.0</b>	<b>871.4</b>	<b>999.7</b>	<b>1 869.5</b>	<b>78.9</b>	<b>375.8</b>
Establishments with an average of—												
1 to 4 employees .....	E9	110	.1	4.2	.1	.2	2.0	7.6	9.2	16.7	.7	3.8
5 to 9 employees .....	E4	27	.2	5.1	.1	.2	2.6	11.0	12.7	24.0	1.3	4.1
10 to 19 employees .....	E2	37	.5	15.0	.3	.7	7.7	37.6	60.4	97.8	4.0	17.8
20 to 49 employees .....	—	43	1.3	38.2	.9	1.8	20.6	102.5	126.5	229.0	7.5	39.5
50 to 99 employees .....	E1	36	2.4	80.3	1.6	3.3	41.0	189.8	234.6	424.3	15.0	78.9
100 to 249 employees .....	E1	15	2.0	70.6	1.3	2.5	35.0	212.2	304.7	511.4	13.6	97.7
250 to 499 employees .....	E3	3	6.1	202.0	3.6	6.7	80.2	310.7	251.5	566.2	36.7	134.1
1,000 to 2,499 employees .....	—	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
2,500 employees or more .....	—	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	107	.2	5.5	.1	.3	2.7	9.6	11.7	21.3	.9	4.7

Note: For qualifications of data, see footnotes on table 1a. Data shown as (D) are included in underscored figures above.

<sup>1</sup>Payroll and sales data for some small single-establishment manufacturing 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 the items shown 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 for those employment-size classes where estimated data based on administrative-record data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

<sup>2</sup>Report forms were not mailed to small single-establishment companies with up to 20 employees (cutoff varied by industry). Payroll and sales data for 1992 were obtained from administrative records supplied by other agencies of the Federal Government. Those data were then used in conjunction with industry averages to estimate the items shown. Data are also included in respective employment-size classes shown.

**Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1992**

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry or product class code	Industry or primary product class	All establishments (number)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				
<b>3351</b>	<b>Copper rolling and drawing:</b> All establishments in industry -----	115	18.9	606.1	14.5	32.9	424.6	1 453.3	4 487.1	6 000.1	126.8
	Establishments with this product class primary:										
33511	Copper wire, bare and tinned (nonelectrical) -----	11	1.4	38.4	1.1	3.1	27.1	96.0	122.9	215.6	2.5
33513	Copper and copper-base alloy rod, bar, and shapes --	20	4.2	129.8	3.1	6.9	89.2	270.7	2 066.9	2 378.4	30.0
33514	Copper and copper-base alloy sheet, strip, and plate -	25	7.4	265.2	5.5	12.6	183.2	624.7	1 149.7	1 778.6	43.6
33515	Copper and copper-base alloy pipe and tube -----	26	5.5	159.8	4.5	9.5	116.8	435.3	1 087.6	1 541.2	46.9
<b>3353</b>	<b>Aluminum sheet, plate, and foil:</b> All establishments in industry -----	63	24.4	1 014.3	18.3	39.9	717.4	3 229.2	7 273.1	10 648.7	418.3
	Establishments with this product class primary:										
33531	Aluminum plate (thickness of 0.25 inches or more) (including continuous cast) -----	12	.1	3.1	.1	.2	2.2	7.5	26.7	34.3	2.1
33532	Aluminum sheet and strip (including continuous cast) -	41	22.2	929.8	16.6	36.6	658.7	3 015.8	6 731.3	9 882.7	392.9
33533	Plain aluminum foil -----	10	2.2	81.4	1.6	3.2	56.5	205.9	515.1	731.7	23.3
<b>3354</b>	<b>Aluminum extruded products:</b> All establishments in industry -----	193	25.6	687.2	19.7	42.8	456.4	1 374.0	2 358.7	3 735.6	150.0
	Establishments with this product class primary:										
33541	Extruded aluminum rod, bar, and other extruded shapes -----	122	21.2	574.8	16.1	34.7	375.3	1 182.4	1 987.2	3 176.7	123.0
33542	Extruded and drawn aluminum tube -----	20	3.3	86.7	2.7	6.1	63.4	178.0	251.2	427.1	24.6
<b>3355</b>	<b>Aluminum rolling and drawing, n.e.c.:</b> All establishments in industry -----	29	1.5	51.0	1.1	2.7	30.5	128.5	651.1	778.0	14.7
	Establishments with this product class primary:										
33551	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (produced in aluminum rolling mills) -----	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
33552	Rolled aluminum rod, bar (including continuous cast) -	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
33553	Aluminum ingot (produced in aluminum rolling mills) --	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
33554	Aluminum extrusion billet (produced in aluminum rolling mills) -----	4	.4	15.4	.3	.6	10.7	27.7	105.0	131.1	(D)
<b>3356</b>	<b>Nonferrous rolling and drawing, n.e.c.:</b> All establishments in industry -----	182	16.0	545.3	10.7	22.2	332.2	1 193.8	1 466.4	2 713.3	91.8
	Establishments with this product class primary:										
33561	Nickel and nickel-base alloy mill shapes (including nickel-copper alloys) -----	13	4.3	153.7	2.9	6.0	103.8	365.7	369.9	754.8	26.2
33562	Titanium and titanium-base alloy mill shapes (excluding wire) -----	10	2.4	83.4	1.6	3.2	47.3	189.7	234.0	427.1	27.4
33563	Precious metal mill shapes -----	19	2.5	83.6	1.6	3.5	48.3	183.5	357.8	552.6	14.9
33569	All other nonferrous metal mill shapes -----	50	5.7	192.2	3.8	7.9	113.2	380.4	427.6	825.7	18.9
<b>3357</b>	<b>Nonferrous wiredrawing and insulating:</b> All establishments in industry -----	528	60.6	1 724.4	44.8	94.1	1 120.3	4 867.7	8 229.1	13 106.7	364.2
	Establishments with this product class primary:										
33571	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (produced in nonferrous wiredrawing plants) -----	13	1.3	36.1	1.0	2.3	24.6	100.6	273.6	378.5	9.2
33572	Copper and copper-base alloy wire, strand, and cable, (for electrical transmission) -----	24	3.2	84.4	2.4	5.5	57.9	164.2	414.6	586.5	(D)
33573	Other bare nonferrous metal wire, made in nonferrous wiredrawing plants -----	9	.8	25.8	.7	1.5	19.7	70.7	57.5	128.8	(D)
33576	Apparatus wire and cord and flexible cord sets -----	32	5.3	114.5	4.3	8.6	79.1	313.7	444.1	764.7	12.9
33577	Magnet wire -----	32	4.5	139.6	3.4	7.2	94.0	349.9	909.7	1 254.3	44.8
33578	Power wire and cable -----	35	5.5	168.6	4.0	8.2	106.9	411.2	887.0	1 288.1	26.1
33579	Fiber optic cable -----	20	5.3	193.5	4.0	8.0	135.7	786.1	662.8	1 437.9	99.8
3357A	Electronic wire and cable -----	90	12.0	345.9	8.2	18.4	192.9	923.2	907.9	1 850.9	39.6
3357B	Telephone and telegraph wire and cable -----	24	7.0	215.5	5.4	11.2	154.7	595.0	929.5	1 482.6	45.9
3357C	Control and signal wire and cable -----	17	1.9	52.4	1.2	2.6	28.6	124.6	153.7	284.2	12.0
3357D	Building wire and cable -----	30	6.5	167.3	4.9	9.8	116.6	511.1	1 867.6	2 408.4	23.7
3357E	Other wire and cable, n.e.c. -----	35	4.0	98.9	2.8	5.8	58.5	302.6	427.8	736.8	18.1
<b>3398</b>	<b>Metal heat treating:</b> All establishments in industry -----	731	17.4	513.9	13.0	27.7	322.7	1 194.1	772.4	1 952.4	66.9
<b>3399</b>	<b>Primary metal products, n.e.c.:</b> All establishments in industry -----	273	12.7	415.3	7.8	15.3	189.0	871.4	999.7	1 869.5	78.9
	Establishments with this product class primary:										
33991	Metal powders, paste, and flakes -----	85	4.6	155.5	2.8	5.7	75.6	456.3	597.4	1 050.5	40.2
33992	Primary metal products, n.e.c. -----	29	6.7	217.2	4.1	7.7	91.3	330.4	308.2	641.6	31.9

Note: For qualifications of data, see footnotes on table 1a.

**Table 5b. Industry-Product Analysis—Value of Industry and Primary Product Shipments; Specialization and Coverage Ratios: 1992 and Earlier Census Years**

[Million dollars. An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work (total miscellaneous receipts). Subtotals for total value of shipments show this product pattern for an industry. Primary products specialization ratio is the primary products value of shipments divided by the sum of primary products value of shipments plus secondary products value of shipments. The extent of which an industry's primary products are shipped by establishments classified both in and out of an industry is the coverage ratio and is calculated by dividing the primary products value of shipments by the value of primary products shipments made in all industries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry	1992	1987	1982
<b>INDUSTRY 3351, COPPER ROLLING AND DRAWING</b>			
Total value of shipments .....	6 000.1	5 134.0	3 270.0
Primary products value of shipments .....	5 419.1	4 595.9	2 796.4
Secondary products value of shipments .....	204.1	308.8	319.4
Total miscellaneous receipts .....	376.9	229.3	154.2
Value of resales .....	56.1	(D)	23.9
Contract receipts .....	262.6	179.4	(D)
Other miscellaneous receipts .....	58.2	(D)	(D)
Primary products specialization ratio .....	96	94	90
Value of primary products shipments made in all industries .....	5 501.6	4 667.9	2 941.6
Value of primary products shipments made in this industry .....	5 419.1	4 595.9	2 796.4
Value of primary products shipments made in other industries .....	82.5	72.0	145.1
Coverage ratio .....	98	98	95
<b>INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL</b>			
Total value of shipments .....	10 648.7	9 497.2	7 213.8
Primary products value of shipments .....	9 316.1	8 842.3	6 425.0
Secondary products value of shipments .....	421.2	411.3	348.9
Total miscellaneous receipts .....	911.4	243.6	439.9
Value of resales .....	(D)	24.8	(D)
Contract receipts .....	(D)	43.2	(D)
Other miscellaneous receipts .....	96.2	175.6	(NA)
Primary products specialization ratio .....	96	96	95
Value of primary products shipments made in all industries .....	9 486.2	9 051.9	6 519.7
Value of primary products shipments made in this industry .....	9 316.1	8 842.3	6 425.0
Value of primary products shipments made in other industries .....	170.1	209.6	94.7
Coverage ratio .....	98	98	99
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS</b>			
Total value of shipments .....	3 735.6	4 292.8	2 673.1
Primary products value of shipments .....	3 396.2	3 676.4	2 319.2
Secondary products value of shipments .....	212.1	531.1	291.1
Total miscellaneous receipts .....	127.3	85.3	62.8
Value of resales .....	30.5	37.4	18.1
Contract receipts .....	34.7	24.1	11.6
Other miscellaneous receipts .....	62.1	23.8	33.1
Primary products specialization ratio .....	94	87	89
Value of primary products shipments made in all industries .....	3 708.3	3 781.9	2 550.5
Value of primary products shipments made in this industry .....	3 396.2	3 676.4	2 319.2
Value of primary products shipments made in other industries .....	312.0	105.5	231.3
Coverage ratio .....	92	97	91
<b>INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.</b>			
Total value of shipments .....	778.0	482.3	670.8
Primary products value of shipments .....	646.3	463.1	506.1
Secondary products value of shipments .....	(D)	9.6	151.8
Total miscellaneous receipts .....	(D)	9.7	12.8
Value of resales .....	(D)	.5	(D)
Contract receipts .....	(D)	(D)	(D)
Other miscellaneous receipts .....	(D)	(D)	(D)
Primary products specialization ratio .....	(D)	98	77
Value of primary products shipments made in all industries .....	1 078.0	1 099.4	975.0
Value of primary products shipments made in this industry .....	646.3	463.1	506.1
Value of primary products shipments made in other industries .....	431.8	636.3	468.9
Coverage ratio .....	60	42	52
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.</b>			
Total value of shipments .....	2 713.3	3 049.4	3 418.3
Primary products value of shipments .....	2 453.0	2 685.3	3 157.1
Secondary products value of shipments .....	142.8	297.2	197.2
Total miscellaneous receipts .....	117.5	87.7	64.0
Value of resales .....	41.8	30.0	12.8
Contract receipts .....	52.1	36.8	3.8
Other miscellaneous receipts .....	23.6	20.8	47.4
Primary products specialization ratio .....	94	91	94
Value of primary products shipments made in all industries .....	2 592.5	2 810.5	3 305.0
Value of primary products shipments made in this industry .....	2 453.0	2 685.3	3 041.0
Value of primary products shipments made in other industries .....	139.5	125.2	147.9
Coverage ratio .....	95	96	96

MANUFACTURES—INDUSTRY SERIES

NONFERROUS METAL MILLS & PRIM. METAL 33D-21

**Table 5b. Industry–Product Analysis—Value of Industry and Primary Product Shipments; Specialization and Coverage Ratios: 1992 and Earlier Census Years—Con.**

[Million dollars. An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work (total miscellaneous receipts). Subtotals for total value of shipments show this product pattern for an industry. Primary products specialization ratio is the primary products value of shipments divided by the sum of primary products value of shipments plus secondary products value of shipments. The extent of which an industry's primary products are shipped by establishments classified both in and out of an industry is the coverage ratio and is calculated by dividing the primary products value of shipments by the value of primary products shipments made in all industries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry	1992	1987	1982
<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING</b>			
Total value of shipments .....	13 106.7	10 826.5	8 216.9
Primary products value of shipments .....	12 090.7	10 156.2	7 753.4
Secondary products value of shipments .....	500.1	359.5	272.3
Total miscellaneous receipts .....	515.8	310.8	198.8
Value of resales .....	307.8	182.1	86.1
Contract receipts .....	114.8	63.6	20.5
Other miscellaneous receipts .....	93.3	65.0	92.2
Primary products specialization ratio .....	96	97	97
Value of primary products shipments made in all industries .....	12 300.1	10 341.1	8 188.1
Value of primary products shipments made in this industry .....	12 090.7	10 156.2	7 753.4
Value of primary products shipments made in other industries .....	209.4	184.9	434.7
Coverage ratio .....	98	98	95
<b>INDUSTRY 3398, METAL HEAT TREATING</b>			
Total value of shipments .....	1 952.4	1 397.3	1 128.2
Primary products value of shipments .....	1 814.3	1 318.0	1 073.8
Secondary products value of shipments .....	51.5	21.6	11.6
Total miscellaneous receipts .....	86.6	57.7	42.7
Value of resales .....	5.4	9.8	33.8
Contract receipts .....	33.4	42.2	4.9
Other miscellaneous receipts .....	47.8	5.8	4.0
Primary products specialization ratio .....	(NA)	(NA)	(NA)
Value of primary products shipments made in all industries .....	1 879.3	1 387.0	1 105.9
Value of primary products shipments made in this industry .....	1 814.3	1 318.0	1 073.8
Value of primary products shipments made in other industries .....	65.0	69.0	32.1
Coverage ratio .....	(NA)	(NA)	(NA)
<b>INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.</b>			
Total value of shipments .....	1 869.5	1 510.1	938.1
Primary products value of shipments .....	1 567.9	1 215.4	784.3
Secondary products value of shipments .....	239.6	239.6	116.8
Total miscellaneous receipts .....	61.9	55.0	36.9
Value of resales .....	44.2	38.7	12.9
Contract receipts .....	15.7	13.0	17.5
Other miscellaneous receipts .....	2.1	3.3	6.5
Primary products specialization ratio .....	87	84	87
Value of primary products shipments made in all industries .....	1 790.1	1 467.9	959.0
Value of primary products shipments made in this industry .....	1 567.9	1 215.4	784.3
Value of primary products shipments made in other industries .....	222.2	252.5	174.6
Coverage ratio .....	88	83	82

Note: For qualifications of data, see footnotes on table 1a.



**Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1992 and 1987**

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

Product code	Product	1992				1987			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>	
				Quantity <sup>2</sup>	Value (million dollars)			Quantity <sup>2</sup>	Value (million dollars)
<b>3351--</b>	<b>COPPER ROLLING AND DRAWING</b>								
	<b>Total .....</b>	<b>(NA)</b>	<b>(X)</b>	<b>(X)</b>	<b>5 501.6</b>	<b>(NA)</b>	<b>(X)</b>	<b>(X)</b>	<b>4 667.9</b>
33511	Copper wire, bare and tinned (nonelectrical) .....	(NA)	(X)	(X)	227.9	(NA)	(X)	(X)	326.4
33511 11	Unalloyed .....	10	(S)	139.5	105.1	11	76.6	74.9	184.0
33511 31	Alloyed .....	16		30.1	116.1	18	46.0	40.6	119.5
33511 00	Copper wire, bare and tinned (nonelectrical), n.s.k. ....	(NA)	(X)	(X)	6.8	(NA)	(X)	(X)	22.9
33513	Copper and copper-base alloy rod, bar, and shapes .....	(NA)	(X)	(X)	2 312.1	(NA)	(X)	(X)	1 915.4
33513 11	Unalloyed (except electric rod) .....	9	1 091.6	957.5	829.9	14	989.8	850.5	1 088.8
33513 32	Alloyed (except electric rod) .....	22	1 329.4	* 729.6	1 482.1	25	506.5	494.5	819.9
33513 00	Copper and copper-base alloy rod, bar, and shapes, n.s.k. ....	(NA)	(X)	(X)	.2	(NA)	(X)	(X)	6.7
33514	Copper and copper-base alloy sheet, strip, and plate .....	(NA)	(X)	(X)	1 352.3	(NA)	(X)	(X)	1 017.5
33514 13	Unalloyed .....	9	182.2	180.1	316.4	10	157.4	144.9	293.8
33514 35	Alloyed (including military cups and discs, net weight) .....	24	368.7	364.6	1 033.1	20	428.5	368.3	708.8
33514 00	Copper and copper-base alloy sheet, strip, and plate, n.s.k. ....	(NA)	(X)	(X)	2.7	(NA)	(X)	(X)	14.9
33515	Copper and copper-base alloy pipe and tube .....	(NA)	(X)	(X)	1 534.7	(NA)	(X)	(X)	1 264.0
33515 16	Unalloyed:								
33515 18	Pipe and tube, plumbing .....	7	** 192.4	243.7	770.2	8	299.5	302.3	716.6
33515 36	Other pipe and tube .....	12	104.5	156.6	336.6	10	212.6	211.9	313.2
33515 38	Alloyed:								
33515 00	Pipe and tube, plumbing .....	4		(S)	(S)	424.8	(NA)	50.1	53.7
33515 38	Other pipe and tube .....	17		(S)	(S)	424.8	(NA)	50.1	53.7
33515 00	Copper and copper-base alloy pipe and tube, n.s.k. ....	(NA)	(X)	(X)	3.0	(NA)	(X)	(X)	64.0
33510	Copper rolling and drawing, n.s.k. ....	(NA)	(X)	(X)	74.6	(NA)	(X)	(X)	144.5
33510 00	Copper rolling and drawing, n.s.k. <sup>3</sup> .....	(NA)	(X)	(X)	70.7	(NA)	(X)	(X)	127.6
33510 02	Copper rolling and drawing, n.s.k. <sup>4</sup> .....	(NA)	(X)	(X)	3.9	(NA)	(X)	(X)	17.0
<b>3353--</b>	<b>ALUMINUM SHEET, PLATE, AND FOIL</b>								
	<b>Total .....</b>	<b>(NA)</b>	<b>(X)</b>	<b>(X)</b>	<b>9 486.2</b>	<b>(NA)</b>	<b>(X)</b>	<b>(X)</b>	<b>9 051.9</b>
33531	Aluminum plate (thickness of 0.25 inches or more) (including continuous cast) .....	(NA)	(X)	(X)	579.8	(NA)	(X)	(X)	433.7
33531 13	Heat-treatable .....	8	87.7	86.6	421.4	4	96.1	82.0	274.0
33531 15	Nonheat-treatable .....	13	49.2	46.7	158.4	7	43.0	51.6	148.5
33531 00	Aluminum plate (thickness of 0.25 inches or more) (including continuous cast), n.s.k. ....	(NA)	(X)	(X)	-	(NA)	(X)	(X)	11.2
33532	Aluminum sheet and strip (including continuous cast) .....	(NA)	(X)	(X)	8 213.5	(NA)	(X)	(X)	7 998.3
33532 23	Flat, heat-treatable .....	10	66.8	63.1	191.0	5	71.2	66.4	189.3
33532 25	Flat, nonheat-treatable, bare and precoated .....	11	* 122.9	123.9	313.3	7	99.5	111.4	254.8
33532 27	Coiled, heat-treatable .....	14	705.6	703.4	1 316.7	11	982.2	648.2	1 219.8
33532 31	Coiled, nonheat-treatable, bare .....	23	4 699.7	2 410.0	4 529.7	17	2 999.7	2 822.7	5 093.2
33532 33	Coiled, nonheat-treatable, precoated (including only permanent finishes such as enameling and vinyl coatings) .....	18	* 726.9	754.5	1 862.8	13	569.3	613.6	1 193.9
33532 00	Aluminum sheet and strip (including continuous cast), n.s.k. ....	(NA)	(X)	(X)	-	(NA)	(X)	(X)	47.4
33533	Plain aluminum foil .....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	546.6
33533 00	Plain aluminum foil (less than .006 inches thick) .....	12	<sup>5</sup> 338.5	<sup>5</sup> 335.1	<sup>5</sup> 692.9	14	256.7	249.0	546.6
33534	Aluminum welded tube .....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	40.8
33534 00	Aluminum welded tube .....	4	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>5</sup> )	6	(S)	(S)	40.8
33530	Aluminum sheet, plate, and foil, n.s.k. ....	(NA)	(X)	(X)	-	(NA)	(X)	(X)	32.5
33530 00	Aluminum sheet, plate, and foil, n.s.k. <sup>6</sup> .....	(NA)	(X)	(X)	-	(NA)	(X)	(X)	28.8
33530 02	Aluminum sheet, plate, and foil, n.s.k. <sup>7</sup> .....	(NA)	(X)	(X)	-	(NA)	(X)	(X)	3.7

See footnotes at end of table.

**Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1992 and 1987—Con.**

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

Product code	Product	1992				1987			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>	
				Quantity <sup>2</sup>	Value (million dollars)			Quantity <sup>2</sup>	Value (million dollars)
<b>3354—</b>	<b>ALUMINUM EXTRUDED PRODUCTS</b>								
	<b>Total</b> .....	(NA)	(X)	(X)	3 708.3	(NA)	(X)	(X)	3 781.9
33541	Extruded aluminum rod, bar, and other extruded shapes .....	(NA)	(X)	(X)	2 971.6	(NA)	(X)	(X)	3 038.6
33541 15	Rod and bar: Alloys other than 2000 and 7000 series .....	27	**243.6	*240.7	476.0	22	196.1	196.6	522.7
33541 18	Alloys in 2000 and 7000 series .....	9	*97.2	95.1	187.9	11	188.2	183.0	399.9
33541 25	Other extruded shapes (except tube): Alloys other than 2000 and 7000 series .....	68	*996.4	*984.9	2 027.2	52	725.3	740.9	1 561.6
33541 28	Alloys in 2000 and 7000 series .....	11	43.0	43.0	213.8	10	112.4	113.4	394.3
33541 00	Extruded aluminum rod, bar, and other extruded shapes, n.s.k. ....	(NA)	(X)	(X)	66.7	(NA)	(X)	(X)	160.1
33542	Extruded and drawn aluminum tube .....	(NA)	(X)	(X)	538.8	(NA)	(X)	(X)	472.7
33542 61	Alloys other than 2000 and 7000 series .....	34	*157.1	154.6	409.3	25	190.3	*152.7	385.0
33542 63	Alloys in 2000 and 7000 series .....	11	34.2	32.1	128.6	5	(S)	(S)	67.7
33542 00	Extruded and drawn aluminum tube, n.s.k. ....	(NA)	(X)	(X)	1.0	(NA)	(X)	(X)	20.0
33540	Aluminum extruded products, n.s.k. ....	(NA)	(X)	(X)	197.9	(NA)	(X)	(X)	270.6
33540 00	Aluminum extruded products, n.s.k. <sup>8</sup> .....	(NA)	(X)	(X)	189.0	(NA)	(X)	(X)	256.8
33540 02	Aluminum extruded products, n.s.k. <sup>9</sup> .....	(NA)	(X)	(X)	8.9	(NA)	(X)	(X)	13.7
<b>3355—</b>	<b>ALUMINUM ROLLING AND DRAWING, N.E.C.</b>								
	<b>Total</b> .....	(NA)	(X)	(X)	1 078.0	(NA)	(X)	(X)	1 099.4
33551	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (produced in aluminum rolling mills) .....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	111.4
33551 00	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (including ACSR) <sup>10</sup> .....	5	(D)	(D)	(D)	(NA)	(NA)	(NA)	111.4
33552	Rolled aluminum rod, bar (including continuous cast) .....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	326.6
33552 22	Rolled .....	5	81.7	76.5	130.3	(NA)	190.1	161.5	257.4
33552 25	Continuous cast .....	1	(D)	(D)	(D)	(NA)	190.1	161.5	257.4
33552 00	Rolled aluminum rod, bar (including continuous cast), n.s.k. ....	(NA)	(X)	(X)	—	(NA)	(X)	(X)	69.2
33553	Aluminum ingot (produced in aluminum rolling mills) .....	(NA)	(X)	(X)	413.2	(NA)	(X)	(X)	322.5
33553 00	Ingot, excluding billet .....	10	(S)	(S)	413.2	12	1 492.0	232.1	322.5
33554	Aluminum extrusion billet (produced in aluminum rolling mills) .....	(NA)	(X)	(X)	152.4	(NA)	(X)	(X)	281.9
33554 00	Extrusion ingot (billet) .....	13	*296.6	187.8	152.4	16	(S)	(S)	281.9
33550	Aluminum rolling and drawing, n.e.c., n.s.k. ....	(NA)	(X)	(X)	53.1	(NA)	(X)	(X)	57.0
33550 00	Aluminum rolling and drawing, n.e.c., n.s.k. <sup>3</sup> .....	(NA)	(X)	(X)	49.9	(NA)	(X)	(X)	43.9
33550 02	Aluminum rolling and drawing, n.e.c., n.s.k. <sup>4</sup> .....	(NA)	(X)	(X)	3.2	(NA)	(X)	(X)	13.1
<b>3356—</b>	<b>NONFERROUS ROLLING AND DRAWING, N.E.C.</b>								
	<b>Total</b> .....	(NA)	(X)	(X)	2 592.5	(NA)	(X)	(X)	2 810.5
33561	Nickel and nickel-base alloy mill shapes (including nickel-copper alloys) .....	(NA)	(X)	(X)	682.3	(NA)	(X)	(X)	627.0
33561 61	Plate, sheet, and strip (excluding nickel-copper alloys) .....	11	111.9	17.7	242.8	10	(D)	(D)	(D)
33561 64	Other nickel shapes (excluding nickel-copper alloys and wire) .....	10	(S)	22.8	379.6	10	37.7	40.2	336.6
33561 65	Nickel-copper alloys, all shapes and forms (except wire) .....	7	101.5	1.7	21.7	9	(D)	(D)	(D)
33561 66	Nickel and nickel alloy wire .....	6	(S)	3.5	38.1	8	1.3	1.3	17.1
33561 00	Nickel and nickel-base alloy mill shapes (including nickel-copper alloys), n.s.k. ....	(NA)	(X)	(X)	—	(NA)	(X)	(X)	6.5
33562	Titanium and titanium-base alloy mill shapes (excluding wire) .....	(NA)	(X)	(X)	501.6	(NA)	(X)	(X)	484.4
33562 72	Ingot .....	6	14.9	14.8	124.9	6	18.3	18.0	142.2
33562 74	Forging and extrusion ingot (billet) .....	6	*11.4	9.6	145.7	6	(S)	(S)	116.0
33562 79	Other, including sheet, plate, tubing, bar, etc. ....	15	9.7	6.2	221.1	12	(S)	(S)	199.0
33562 00	Titanium and titanium-base alloy mill shapes (excluding wire), n.s.k. ....	(NA)	(X)	(X)	9.9	(NA)	(X)	(X)	27.3

See footnotes at end of table.

**33D-24 NONFERROUS METAL MILLS & PRIM. METAL**

**MANUFACTURES—INDUSTRY SERIES**

**Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1992 and 1987—Con.**

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

Product code	Product	1992				1987			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>	
				Quantity <sup>2</sup>	Value (million dollars)			Quantity <sup>2</sup>	Value (million dollars)
<b>3356—</b>	<b>NONFERROUS ROLLING AND DRAWING, N.E.C.—Con.</b>								
33563	Precious metal mill shapes.....	(NA)	(X)	(X)	532.2	(NA)	(X)	(X)	843.8
33563 81	Gold (excluding wire)..... 1,000 troy ounces..	9	(S)	(S)	125.0	9	(S)	(S)	381.8
33563 83	Silver (excluding wire)..... 1,000 troy ounces..	8	(S)	(S)	121.8	10	(D)	(D)	(D)
33563 86	Other, including platinum-group metals (excluding wire) <sup>10</sup> ..... 1,000 troy ounces..	5	(S)	(S)	76.0	(NA)	(D)	(D)	(D)
33563 91	Precious metal wire..... 1,000 troy ounces..	9	(S)	(S)	81.2	12	(S)	(S)	143.9
33563 00	Precious metal mill shapes, n.s.k.....	(NA)	(X)	(X)	128.2	(NA)	(X)	(X)	43.3
33569	All other nonferrous metal mill shapes.....	(NA)	(X)	(X)	735.6	(NA)	(X)	(X)	678.5
33569 34	Magnesium and magnesium-base alloy mill shapes (excluding wire)..... 1,000 s tons..	7	24.6	20.9	73.3	3	(D)	(D)	(D)
33569 51	Lead and lead-base alloy mill shapes (excluding wire): Plate, sheet, and strip..... 1,000 s tons..	4	(S)		11.6	8	15.8	16.4	16.1
33569 57	Other rolled, drawn, or extruded products, including pipe, tubing, traps, and bends <sup>10</sup> ..... 1,000 s tons..	13	(S)	(S)	66.2	(NA)	25.4	24.8	60.3
33569 94	Tungsten and tungsten-base alloy mill shapes (excluding wire)..... 1,000 s tons..	4	(S)	(S)	7.0	7	(S)	(S)	16.3
33569 96	Molybdenum and molybdenum-base alloy mill shapes (excluding wire)..... 1,000 s tons..	4	(S)	(S)	24.0	7	(S)	(S)	21.9
33569 97	Other nonferrous metals, rolled, drawn, and extruded shapes, including zinc (excluding wire) <sup>10</sup> ..... 1,000 s tons..	26	(S)	(S)	322.6	(NA)	(D)	(D)	(D)
33569 93	Other nonferrous wire (except copper, aluminum, nickel, and precious metals) <sup>10</sup> ..... 1,000 s tons..	15	(S)	(S)	169.7	(NA)	11.9	5.7	35.6
33569 00	All other nonferrous metal mill shapes, n.s.k.....	(NA)	(X)	(X)	62.3	(NA)	(X)	(X)	98.9
33560	Nonferrous rolling and drawing, n.e.c., n.s.k.....	(NA)	(X)	(X)	140.7	(NA)	(X)	(X)	176.7
33560 00	Nonferrous rolling and drawing, n.e.c., n.s.k. <sup>11</sup> .....	(NA)	(X)	(X)	120.5	(NA)	(X)	(X)	129.0
33560 02	Nonferrous rolling and drawing, n.e.c., n.s.k. <sup>12</sup> .....	(NA)	(X)	(X)	20.3	(NA)	(X)	(X)	47.7
<b>3357—</b>	<b>NONFERROUS WIREDRAWING AND INSULATING</b>								
	<b>Total.....</b>	<b>(NA)</b>	<b>(X)</b>	<b>(X)</b>	<b>12 300.1</b>	<b>(NA)</b>	<b>(X)</b>	<b>(X)</b>	<b>10 341.1</b>
33571	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (produced in nonferrous wiredrawing plants).....	(NA)	(X)	(X)	383.5	(NA)	(X)	(X)	306.8
33571 00	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (include ACSR) <sup>10</sup> ..... 1,000 s tons..	21	(S)	(S)	383.5	(NA)	(NA)	(NA)	306.8
33572	Copper and copper-base alloy wire, strand, and cable, (for electrical transmission).....	(NA)	(X)	(X)	593.7	(NA)	(X)	(X)	485.0
33572 11	Bare wire, unalloyed..... 1,000 s tons..	18	189.0	96.2	223.3	13	106.1	56.0	127.9
33572 51	Bare wire, alloyed..... 1,000 s tons..	7	(S)	(S)	49.1	5	(S)	(S)	( <sup>13</sup> )
33572 71	Strand and cable, bare..... 1,000 s tons..	11	126.4	114.0	257.6	10	151.4	83.5	195.6
33572 81	Other copper and copper-base alloy wire, strand, and cable (including electrical wire rod) <sup>10</sup> ..... 1,000 s tons..	12	(S)	(S)	27.3	2	(D)	(D)	<sup>13</sup> 68.5
33572 00	Copper and copper-base alloy wire, strand, and cable, (for electrical transmission), n.s.k.....	(NA)	(X)	(X)	36.3	(NA)	(X)	(X)	93.1
33573	Other bare nonferrous metal wire, made in nonferrous wiredrawing plants.....	(NA)	(X)	(X)	133.6	(NA)	(X)	(X)	121.1
33573 00	Other nonferrous metal wire, bare..... 1,000 s tons..	14	(S)	(S)	133.6	17	(S)	(S)	121.1
33575	Nonferrous wire cloth and other woven wire products (made in nonferrous wiredrawing plants).....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	26.5
33575 00	Nonferrous wire cloth and other woven wire products <sup>10</sup> .....	1	(X)	(X)	(D)	(NA)	(X)	(X)	26.5
33576	Apparatus wire and cord and flexible cord sets.....	(NA)	(X)	(X)	817.9	(NA)	(X)	(X)	809.5
33576 00	Apparatus wire and cordage and flexible cord sets, except wiring harnesses.....	43	(X)	(X)	817.9	51	(X)	(X)	809.5
33577	Magnet wire.....	(NA)	(X)	(X)	1 047.4	(NA)	(X)	(X)	708.1
33577 00	Magnet wire.....	26	(X)	(X)	1 047.4	14	(X)	(X)	708.1
33578	Power wire and cable.....	(NA)	(X)	(X)	1 236.7	(NA)	(X)	(X)	1 159.9
33578 00	Power wire and cable.....	37	(X)	(X)	1 236.7	42	(X)	(X)	1 159.9
33579	Fiber optic cable.....	(NA)	(X)	(X)	1 068.3	(NA)	(X)	(X)	557.3
33579 11	Communication (telephone, telegraph, and electronic).....	26	(X)	(X)	956.4	(NA)	(X)	(X)	544.3
33579 21	All other uses.....	11	(X)	(X)	110.3				
33579 00	Fiber optic cable, n.s.k.....	(NA)	(X)	(X)	1.6	(NA)	(X)	(X)	12.9
3357A	Electronic wire and cable.....	(NA)	(X)	(X)	1 823.4	(NA)	(X)	(X)	1 574.2
3357A 00	Electronic wire and cable.....	126	(X)	(X)	1 823.4	98	(X)	(X)	1 574.2

See footnotes at end of table.

**Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1992 and 1987—Con.**

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

Product code	Product	1992				1987			
		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments <sup>1</sup>	
				Quantity <sup>2</sup>	Value (million dollars)			Quantity <sup>2</sup>	Value (million dollars)
<b>3357—</b>	<b>NONFERROUS WIREDRAWING AND INSULATING—Con.</b>								
3357B	Telephone and telegraph wire and cable .....	(NA)	(X)	(X)	1 541.6	(NA)	(X)	(X)	1 435.6
3357B 00	Telephone and telegraph wire and cable .....	30	(X)	(X)	1 541.6	33	(X)	(X)	1 435.6
3357C	Control and signal wire and cable .....	(NA)	(X)	(X)	386.0	(NA)	(X)	(X)	191.9
3357C 00	Control and signal wire and cable .....	44	(X)	(X)	386.0	38	(X)	(X)	191.9
3357D	Building wire and cable .....	(NA)	(X)	(X)	2 028.9	(NA)	(X)	(X)	1 885.5
3357D 00	Building wire and cable .....	22	(X)	(X)	2 028.9	40	(X)	(X)	1 885.5
3357E	Other wire and cable, n.e.c. ....	(NA)	(X)	(X)	693.0	(NA)	(X)	(X)	510.9
3357E 00	Other insulated wire and cable, including automotive .....	60	(X)	(X)	693.0	52	(X)	(X)	510.9
33570	Nonferrous wiring and insulating, n.s.k. ....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	568.9
33570 00	Nonferrous wiring and insulating, n.s.k. <sup>6</sup> .....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	427.8
33570 02	Nonferrous wiring and insulating, n.s.k. <sup>7</sup> .....	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	141.0
Product code	Product	1992			1987				
		Number of companies with shipments of \$100,000 or more	Value of product shipments <sup>1</sup> (million dollars)	Value of product shipments <sup>1</sup> (million dollars)	Number of companies with shipments of \$100,000 or more	Value of product shipments <sup>1</sup> (million dollars)	Value of product shipments <sup>1</sup> (million dollars)		
<b>3398—</b>	<b>METAL HEAT TREATING</b>								
	<b>Total .....</b>		<b>(NA)</b>	<b>1 879.3</b>		<b>(NA)</b>	<b>1 387.0</b>		
33980	Heat treating of metal for the trade .....		(NA)	1 879.3		(NA)	1 387.0		
33980 00	Heat treating of metal (heat treating, pickling, annealing, brazing, shot peening, tempering, etc.) <sup>6</sup> .....		548	1 839.0		(NA)	1 349.4		
33980 02	Metal heat treating, n.s.k. <sup>7</sup> .....		(NA)	40.3		(NA)	37.6		
Product code	Product	1992				1987			
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>			
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)		
<b>3399—</b>	<b>PRIMARY METAL PRODUCTS, N.E.C.</b>								
	<b>Total .....</b>	<b>(NA)</b>	<b>(X)</b>	<b>1 790.1</b>	<b>(NA)</b>	<b>(X)</b>	<b>1 467.9</b>		
33991	Metal powders, paste, and flakes .....	(NA)	(X)	1 213.9	(NA)	(X)	993.0		
33991 11	Aluminum and aluminum-base alloy .....	17	99.1	156.3	12	72.7	85.4		
33991 33	Copper and copper-base alloy .....	24	54.1	123.6	18	*65.6	113.9		
33991 55	Iron and steel .....	28	**694.9	274.0	15	*474.1	177.3		
33991 66	Nickel-cobalt-base superalloy materials .....	15	10.9	77.4	6	(S)	33.2		
33991 77	Tungsten and tungsten-base alloy .....	9	46.5	149.9	8	(S)	121.1		
33991 86	Molybdenum .....	5	1.8	19.3	4	2.8	30.7		
33991 87	Titanium .....	4							
33991 88	Tantalum .....	3	(X)	34.4	(NA)	(X)	32.5		
33991 91	Precious metals and precious-metal-base alloys (gold, silver, platinum, etc.) .....	13	59.7	149.7	15	14.9	160.0		
33991 98	Other nonferrous powders, paste, and flakes .....	28	174.9	185.2	26	113.3	139.8		
33991 00	Metal powders, paste, and flakes, n.s.k. ....	(NA)	(X)	44.0	(NA)	(X)	99.1		
33992	Primary metal products, n.e.c. ....	(NA)	(X)	409.9	(NA)	(X)	311.9		
33992 11	Nonferrous nails, brads, tacks, and staples .....	11	(X)	78.5	12	(X)	188.4		
33992 98	Other primary metal products, n.e.c. ....	27	(X)	326.8	22	(X)	101.8		
33992 00	Primary metal products, n.e.c., n.s.k. ....	(NA)	(X)	4.6	(NA)	(X)	21.8		
33990	Primary metal products, n.e.c., n.s.k. ....	(NA)	(X)	166.3	(NA)	(X)	163.0		
33990 00	Primary metal products, n.e.c., n.s.k. <sup>6</sup> .....	(NA)	(X)	145.7	(NA)	(X)	154.5		
33990 02	Primary metal products, n.e.c., n.s.k. <sup>7</sup> .....	(NA)	(X)	20.6	(NA)	(X)	8.5		

<sup>1</sup>Data reported by all producers, not just those with shipments of \$100,000 or more.

<sup>2</sup>For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: \*10 to 19 percent estimated; \*\*20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

<sup>3</sup>Typically for establishments with 10 employees or more.

<sup>4</sup>Typically for establishments with less than 10 employees.

<sup>5</sup>For 1992, product codes are combined to avoid disclosing data for individual companies.

<sup>6</sup>Typically for establishments with 5 employees or more.

<sup>7</sup>Typically for establishments with less than 5 employees.

<sup>8</sup>Typically for establishments with 25 employees or more.

<sup>9</sup>Typically for establishments with less than 25 employees.

<sup>10</sup>For 1992, product code is revised. See appendix C, parts 1 and 2 for comparability.

<sup>11</sup>Typically for establishments with 20 employees or more.

<sup>12</sup>Typically for establishments with less than 20 employees.

<sup>13</sup>For 1987, product codes were combined to avoid disclosing data for individual companies.

**Table 6a-2. Selected Products Primary to More Than One Industry—Quantity and Value of Shipments by Industry: 1992 and 1987**

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

Product code	Product	1992			1987		
		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>		Number of companies with shipments of \$100,000 or more	Product shipments <sup>1</sup>	
			Quantity <sup>2</sup>	Value (million dollars)		Quantity <sup>2</sup>	Value (million dollars)
33347 00	Aluminum ingot ----- 1,000 s tons--	(NA)	(S)	6 425.3	(NA)	4 588.7	5 221.9
33417 00	Made in industry 3334 and other primary industries----- 1,000 s tons--	20		4 429.6	15	2 850.1	3 398.3
33553 00	Made in industry 3341 and other secondary industries ----- 1,000 s tons--	51		2 065.8	51	1 506.5	1 501.1
	Made in industry 3355 and other aluminum rolling and drawing industries----- 1,000 s tons--	10	(S)	413.2	12	232.1	322.5
33348 00	Aluminum extrusion billet ----- 1,000 s tons--	(NA)	(S)	1 282.0	(NA)	1 117.9	1 481.6
33418 00	Made in industry 3334 and other primary industries----- 1,000 s tons--	12		739.5	8	737.3	1 028.4
33554 00	Made in industry 3341 and other secondary industries ----- 1,000 s tons--	11	(S)	143.8	10	**170.6	171.3
	Made in industry 3355 and other aluminum rolling and drawing mills ----- 1,000 s tons--	13		187.8	16	(S)	281.9
33551 00	Aluminum and aluminum-base alloy wire and cable, except covered or insulated----- 1,000 s tons--	(NA)	(D)	(D)	(NA)	(X)	418.2
33571 00	Made in industry 3355, aluminum rolling mills ----- 1,000 s tons--	5	(D)	(D)	(NA)	(NA)	111.4
	Made in industry 3357, nonferrous wiredrawing plants ----- 1,000 s tons--	21	(S)	383.5	(NA)	(NA)	306.8
33561 66	Other bare nonferrous wire ----- 1,000 s tons--	(NA)	(X)	422.7	(NA)	(S)	317.7
33563 91	Made in rolling mills ----- 1,000 s tons--	(NA)	(X)	289.1	(NA)	(X)	196.6
33569 93	Nickel and nickel alloy wire ----- 1,000 s tons--	6		3.5	8	1.3	17.1
33573 00	Precious metal wire ----- 1,000 troy ounces--	9	(S)	81.2	12	(S)	143.9
	Other nonferrous wire ----- 1,000 s tons--	15	(S)	169.7	(NA)	5.7	35.6
33575 00	Made in wiredrawing plants ----- 1,000 s tons--	14	(S)	133.6	17	(S)	121.1
34965 00	Nonferrous wire cloth and other woven wire products-----	(NA)	(X)	(D)	(NA)	(X)	141.5
	Made in wiredrawing plants -----	1	(X)	(D)	(NA)	(X)	26.5
	Not made in wiredrawing plants -----	29	(X)	145.8	(NA)	(X)	115.0
33576 00	Apparatus wire and cord and flexible cord sets -----	(NA)	(X)	1 111.4	(NA)	(X)	1 056.2
36996 00	Made in industry 3357, wiredrawing and insulating plants -----	43	(X)	817.9	51	(X)	809.5
	Made in industry 3699, industries purchasing insulated wire -----	58	(X)	293.5	58	(X)	246.7

Note: For qualifications of data, see footnotes on table 6a-1.

<sup>1</sup>Data reported by all producers, not just those with shipments of \$100,000 or more.

<sup>2</sup>For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: \*10 to 19 percent estimated; \*\*20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

**Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987**

[Million dollars. Product classes shown are those where the data are 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 1992. For meaning of abbreviations and symbols, see introductory text]

Product class and geographic area	1992 value of product shipments	1987 value of product shipments	Product class and geographic area	1992 value of product shipments	1987 value of product shipments
<b>33511, COPPER WIRE, BARE AND TINNED (NONELECTRICAL)</b>			<b>33553, ALUMINUM INGOT (PRODUCED IN ALUMINUM ROLLING MILLS)</b>		
United States .....	227.9	326.4	United States .....	413.2	322.5
			Tennessee .....	38.3	(NA)
<b>33513, COPPER AND COPPER-BASE ALLOY ROD, BAR, AND SHAPES</b>			<b>33554, ALUMINUM EXTRUSION BILLET (PRODUCED IN ALUMINUM ROLLING MILLS)</b>		
United States .....	2 312.1	1 915.4	United States .....	152.4	281.9
Pennsylvania .....	153.0	(NA)	California .....	5.8	27.0
Wisconsin .....	28.1	(NA)	<b>33561, NICKEL AND NICKEL-BASE ALLOY MILL SHAPES (INCLUDING NICKEL-COPPER ALLOYS)</b>		
<b>33514, COPPER AND COPPER-BASE ALLOY SHEET, STRIP, AND PLATE</b>			United States .....	682.3	627.0
United States .....	1 352.3	1 017.5	Pennsylvania .....	18.4	(NA)
Connecticut .....	127.5	87.0	<b>33562, TITANIUM AND TITANIUM-BASE ALLOY MILL SHAPES (EXCLUDING WIRE)</b>		
Massachusetts .....	27.8	(NA)	United States .....	501.6	484.4
Ohio .....	21.3	89.4	<b>33563, PRECIOUS METAL MILL SHAPES</b>		
Pennsylvania .....	202.4	214.0	United States .....	532.2	843.8
<b>33515, COPPER AND COPPER-BASE ALLOY PIPE AND TUBE</b>			Rhode Island .....	60.1	(NA)
United States .....	1 534.7	1 264.0	<b>33569, ALL OTHER NONFERROUS METAL MILL SHAPES</b>		
<b>33531, ALUMINUM PLATE (THICKNESS OF 0.25 INCHES OR MORE) (INCLUDING CONTINUOUS CAST)</b>			United States .....	735.6	678.5
United States .....	579.8	433.7	Illinois .....	65.5	71.3
California .....	65.7	42.0	New Jersey .....	23.4	25.6
<b>33532, ALUMINUM SHEET AND STRIP (INCLUDING CONTINUOUS CAST)</b>			Ohio .....	16.0	(NA)
United States .....	8 213.5	7 998.3	Pennsylvania .....	145.8	(NA)
Ohio .....	579.9	(NA)	Texas .....	12.8	8.8
<b>33533, PLAIN ALUMINUM FOIL</b>			Washington .....	49.5	(NA)
United States .....	(D)	546.6	<b>33571, ALUMINUM AND ALUMINUM-BASE ALLOY WIRE AND CABLE, EXCEPT COVERED OR INSULATED (PRODUCED IN NONFERROUS WIREDRAWING PLANTS)</b>		
Tennessee .....	159.7	(NA)	United States .....	383.5	306.8
<b>33534, ALUMINUM WELDED TUBE</b>			Connecticut .....	13.2	(NA)
United States .....	(D)	40.8	Illinois .....	63.1	(NA)
<b>33541, EXTRUDED ALUMINUM ROD, BAR, AND OTHER EXTRUDED SHAPES</b>			New York .....	39.6	(NA)
United States .....	2 971.6	3 038.6	Texas .....	30.3	(NA)
California .....	287.7	360.0	Washington .....	14.7	(NA)
Florida .....	93.9	115.1	<b>33572, COPPER AND COPPER-BASE ALLOY WIRE, STRAND, AND CABLE, (FOR ELECTRICAL TRANSMISSION)</b>		
Georgia .....	224.2	246.5	United States .....	593.7	485.0
Illinois .....	108.6	110.0	California .....	12.0	(NA)
Indiana .....	302.3	262.2	Indiana .....	64.6	(NA)
Massachusetts .....	14.7	(NA)	Massachusetts .....	41.3	28.4
Michigan .....	124.8	179.7	New York .....	202.1	230.5
Mississippi .....	63.9	117.7	<b>33573, OTHER BARE NONFERROUS METAL WIRE, MADE IN NONFERROUS WIREDRAWING PLANTS</b>		
New York .....	152.4	170.0	United States .....	133.6	121.1
Ohio .....	255.4	223.0	<b>33575, NONFERROUS WIRE CLOTH AND OTHER WOVEN WIRE PRODUCTS (MADE IN NONFERROUS WIREDRAWING PLANTS)</b>		
Pennsylvania .....	193.6	184.3	United States .....	(D)	26.5
Tennessee .....	166.1	(NA)	<b>33576, APPARATUS WIRE AND CORD AND FLEXIBLE CORD SETS</b>		
Texas .....	183.3	167.3	United States .....	817.9	809.5
<b>33542, EXTRUDED AND DRAWN ALUMINUM TUBE</b>			Illinois .....	34.3	50.0
United States .....	538.8	472.7	Indiana .....	231.5	165.7
Arizona .....	34.0	(NA)	Massachusetts .....	46.2	(NA)
California .....	29.6	81.3	New York .....	14.9	(NA)
Ohio .....	17.0	(NA)	Ohio .....	57.7	35.3
<b>33551, ALUMINUM AND ALUMINUM-BASE ALLOY WIRE AND CABLE, EXCEPT COVERED OR INSULATED (PRODUCED IN ALUMINUM ROLLING MILLS)</b>			Rhode Island .....	136.0	148.8
United States .....	(D)	111.4			
<b>33552, ROLLED ALUMINUM ROD, BAR (INCLUDING CONTINUOUS CAST)</b>					
United States .....	(D)	326.6			

See footnotes at end of table.

**Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987—Con.**

[Million dollars. Product classes shown are those where the data are 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 1992. For meaning of abbreviations and symbols, see introductory text]

Product class and geographic area	1992 value of product shipments	1987 value of product shipments	Product class and geographic area	1992 value of product shipments	1987 value of product shipments
<b>33577, MAGNET WIRE</b>			<b>3357C, CONTROL AND SIGNAL WIRE AND CABLE</b>		
<b>United States</b> .....	<b>1 047.4</b>	<b>708.1</b>	<b>United States</b> .....	<b>386.0</b>	<b>191.9</b>
Connecticut.....	14.3	(NA)	Connecticut.....	41.0	35.2
Georgia.....	12.4	(NA)	Massachusetts.....	23.6	16.1
Illinois.....	94.0	86.9	New York.....	43.2	17.3
Indiana.....	392.3	355.2	Pennsylvania.....	35.8	16.1
			Rhode Island.....	35.5	40.4
			Texas.....	31.7	(NA)
<b>33578, POWER WIRE AND CABLE</b>			<b>3357D, BUILDING WIRE AND CABLE</b>		
<b>United States</b> .....	<b>1 236.7</b>	<b>1 159.9</b>	<b>United States</b> .....	<b>2 028.9</b>	<b>1 885.5</b>
California.....	88.7	120.7	New York.....	135.8	145.6
Illinois.....	93.2	(NA)			
Massachusetts.....	51.0	(NA)	<b>3357E, OTHER WIRE AND CABLE, N.E.C.</b>		
Pennsylvania.....	98.1	(NA)	<b>United States</b> .....	<b>693.0</b>	<b>510.9</b>
Texas.....	77.1	(NA)	California.....	10.7	4.8
			Connecticut.....	3.8	39.2
<b>33579, FIBER OPTIC CABLE</b>			Illinois.....	46.6	19.1
<b>United States</b> .....	<b>1 068.3</b>	<b>557.3</b>	Indiana.....	121.5	(NA)
Connecticut.....	8.3	(NA)	Massachusetts.....	49.6	33.7
			New Jersey.....	9.4	12.0
<b>3357A, ELECTRONIC WIRE AND CABLE</b>			New York.....	15.3	9.1
<b>United States</b> .....	<b>1 823.4</b>	<b>1 574.2</b>	Ohio.....	40.4	64.0
Arkansas.....	64.0	8.4	Pennsylvania.....	59.2	41.9
California.....	85.7	67.9	Texas.....	73.4	(NA)
Connecticut.....	141.4	137.8	<b>33991, METAL POWDERS, PASTE, AND FLAKES</b>		
Illinois.....	112.9	66.3	<b>United States</b> .....	<b>1 213.9</b>	<b>993.0</b>
Massachusetts.....	212.8	221.2	California.....	36.1	42.1
New Hampshire.....	21.7	10.2	Connecticut.....	9.2	10.5
New Jersey.....	69.4	104.0	Indiana.....	47.3	25.5
New York.....	55.4	114.5	Massachusetts.....	38.9	35.5
North Carolina.....	352.7	(NA)	Michigan.....	30.0	24.6
Pennsylvania.....	60.0	71.8	New Jersey.....	151.3	237.7
Rhode Island.....	22.2	38.0	New York.....	197.3	97.0
Texas.....	31.2	68.8	Ohio.....	62.8	68.0
Vermont.....	89.8	66.2	Pennsylvania.....	258.7	133.4
			Rhode Island.....	4.8	(NA)
<b>3357B, TELEPHONE AND TELEGRAPH WIRE AND CABLE</b>			Tennessee.....	19.0	30.9
<b>United States</b> .....	<b>1 541.6</b>	<b>1 435.6</b>	<b>33992, PRIMARY METAL PRODUCTS, N.E.C.</b>		
Massachusetts.....	34.5	16.9	<b>United States</b> .....	<b>409.9</b>	<b>311.9</b>
Texas.....	173.1	(NA)	Pennsylvania.....	110.1	23.2

Note: For qualifications of data, see footnotes on table 6a.

**Table 6c. Historical Statistics for Product Classes—Value Shipped by All Producers: 1992 and Earlier Years**

[Million dollars. For meaning of abbreviations and symbols, see introductory text]

Product code	Product class	1992	1991 <sup>1</sup>	1990 <sup>1</sup>	1989 <sup>1</sup>	1988 <sup>1</sup>	1987	1982	1977
<b>3351-</b>	<b>Copper rolling and drawing</b> .....	<b>5 501.6</b>	<b>5 441.8</b>	<b>6 183.5</b>	<b>6 474.5</b>	<b>5 864.3</b>	<b>4 667.9</b>	<b>2 941.6</b>	<b>3 536.1</b>
33511	Copper wire, bare and tinned (nonelectrical) .....	227.9	494.7	482.8	509.3	334.7	326.4	346.4	170.7
33513	Copper and copper-base alloy rod, bar, and shapes .....	2 312.1	2 142.6	2 888.6	2 948.6	2 567.7	1 915.4	921.0	1 491.3
33514	Copper and copper-base alloy sheet, strip, and plate .....	1 352.3	1 149.5	1 149.5	1 272.9	1 288.6	1 017.5	800.8	937.3
33515	Copper and copper-base alloy pipe and tube .....	1 534.7	1 606.8	1 491.9	1 675.0	1 531.7	1 264.0	845.0	895.5
33510	Copper rolling and drawing, n.s.k. ....	74.6	48.2	47.2	52.9	151.6	144.5	28.3	41.3
<b>3353-</b>	<b>Aluminum sheet, plate, and foil</b> .....	<b>9 486.2</b>	<b>9 170.8</b>	<b>10 094.6</b>	<b>10 958.2</b>	<b>10 811.6</b>	<b>9 051.9</b>	<b>6 519.7</b>	<b>5 358.8</b>
33531	Aluminum plate (thickness of 0.25 inches or more) (including continuous cast) .....	579.8	585.5	662.7	717.6	590.5	433.7	378.6	247.3
33532	Aluminum sheet and strip (including continuous cast) .....	8 213.5	7 840.7	8 887.9	9 454.7	9 419.9	7 998.3	5 555.5	4 569.6
33533	Plain aluminum foil .....	692.9	643.8	631.8	683.4	713.9	546.6	545.1	476.6
33534	Aluminum welded tube .....	—	54.9	70.2	73.0	54.9	40.8	29.8	61.6
33530	Aluminum sheet, plate, and foil, n.s.k. ....	—	45.9	41.9	29.6	32.3	32.5	10.8	3.7
<b>3354-</b>	<b>Aluminum extruded products</b> .....	<b>3 708.3</b>	<b>3 821.0</b>	<b>4 176.5</b>	<b>4 756.3</b>	<b>4 499.2</b>	<b>3 781.9</b>	<b>2 550.5</b>	<b>1 928.2</b>
33541	Extruded aluminum rod, bar, and other extruded shapes .....	2 971.6	2 955.2	3 302.8	3 872.1	3 667.3	3 038.6	2 100.4	1 541.9
33542	Extruded and drawn aluminum tube .....	538.8	584.5	594.3	602.9	565.5	472.7	430.1	333.0
33540	Aluminum extruded products, n.s.k. ....	197.9	281.3	279.5	281.3	266.2	270.6	20.1	53.3
<b>3355-</b>	<b>Aluminum rolling and drawing, n.e.c.</b> .....	<b>1 078.0</b>	<b>1 065.5</b>	<b>1 322.9</b>	<b>1 240.7</b>	<b>1 512.4</b>	<b>1 099.4</b>	<b>975.0</b>	<b>1 367.5</b>
33551	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (produced in aluminum rolling mills) .....	459.4	122.1	120.3	140.3	172.9	111.4	201.5	124.1
33552	Rolled aluminum rod, bar (including continuous cast) .....	—	394.2	410.6	455.9	520.1	326.6	341.4	530.0
33553	Aluminum ingot (produced in aluminum rolling mills) .....	413.2	328.8	530.0	342.3	448.1	322.5	—	—
33554	Aluminum extrusion billet (produced in aluminum rolling mills) .....	152.4	150.4	182.8	237.1	308.2	281.9	413.1	709.5
33550	Aluminum rolling and drawing, n.e.c., n.s.k. ....	53.1	70.0	79.3	65.1	63.1	57.0	19.0	3.9

See footnotes at end of table.

**Table 6c. Historical Statistics for Product Classes—Value Shipped by All Producers: 1992 and Earlier Years—Con.**

[Million dollars. For meaning of abbreviations and symbols, see introductory text]

Product code	Product class	1992	1991 <sup>1</sup>	1990 <sup>1</sup>	1989 <sup>1</sup>	1988 <sup>1</sup>	1987	1982	1977
<b>3356-</b>	<b>Nonferrous rolling and drawing, n.e.c.</b> -----	<b>2 592.5</b>	<b>2 787.4</b>	<b>3 212.3</b>	<b>3 420.8</b>	<b>3 152.0</b>	<b>2 810.5</b>	<b>3 305.0</b>	<b>2 616.5</b>
33561	Nickel and nickel-base alloy mill shapes (including nickel-copper alloys) -----	682.3	895.0	904.2	982.8	773.4	627.0	(NA)	(NA)
33562	Titanium and titanium-base alloy mill shapes (excluding wire) -----	501.6	502.2	802.2	841.5	659.6	484.4	(NA)	(NA)
33563	Precious metal mill shapes -----	532.2	611.2	696.4	745.0	787.1	843.8	(NA)	(NA)
33569	All other nonferrous metal mill shapes -----	735.6	643.2	673.8	713.8	727.1	678.5	(NA)	(NA)
33560	Nonferrous rolling and drawing, n.e.c., n.s.k. -----	140.7	135.6	135.8	137.8	204.9	176.7	39.7	78.8
<b>3357-</b>	<b>Nonferrous wire drawing and insulating</b> -----	<b>12 300.1</b>	<b>11 209.8</b>	<b>11 946.6</b>	<b>12 822.0</b>	<b>11 983.3</b>	<b>10 341.1</b>	<b>8 188.1</b>	<b>6 460.3</b>
33571	Aluminum and aluminum-base alloy wire and cable, except covered or insulated (produced in nonferrous wire drawing plants) -----	383.5	346.7	333.8	412.7	465.7	306.8	284.9	263.4
33572	Copper and copper-base alloy wire, strand, and cable, (for electrical transmission) -----	593.7	587.1	617.0	604.3	646.3	485.0	402.3	496.8
33573	Other bare nonferrous metal wire, made in nonferrous wire drawing plants -----	133.6	160.0	154.4	194.0	198.0	121.1	116.1	117.9
33575	Nonferrous wire cloth and other woven wire products (made in nonferrous wire drawing plants) -----	(D)	45.2	40.3	39.9	38.8	26.5	39.1	94.5
33576	Apparatus wire and cord and flexible cord sets -----	817.9	718.5	718.9	911.9	860.2	809.5	477.6	447.8
33577	Magnet wire -----	1 047.4	922.5	946.2	968.1	970.5	708.1	747.0	754.4
33578	Power wire and cable -----	1 236.7	1 288.9	1 600.7	1 805.5	1 412.5	1 159.9	854.5	705.9
33579	Fiber optic cable -----	1 068.3	680.4	687.2	649.6	607.6	557.3	88.6	(NA)
3357A	Electronic wire and cable -----	1 823.4	1 607.4	1 791.4	1 922.6	1 869.3	1 574.2	1 304.4	478.9
3357B	Telephone and telegraph wire and cable -----	1 541.6	1 449.3	1 562.1	1 537.6	1 621.6	1 435.6	1 815.2	1 600.2
3357C	Control and signal wire and cable -----	386.0	272.0	250.8	269.5	183.0	191.9	248.8	128.3
3357D	Building wire and cable -----	2 028.9	1 947.1	2 141.2	2 326.3	2 044.2	1 885.5	1 083.6	890.2
3357E	Other wire and cable, n.e.c. -----	693.0	617.8	571.0	683.0	545.5	510.9	550.6	431.7
33570	Nonferrous wire drawing and insulating, n.s.k. -----	(D)	566.6	531.8	497.0	520.1	568.9	175.4	50.3
<b>3398-</b>	<b>Metal heat treating</b> -----	<b>1 879.3</b>	<b>1 747.4</b>	<b>1 838.1</b>	<b>1 785.5</b>	<b>1 652.6</b>	<b>1 387.0</b>	<b>1 105.9</b>	<b>704.1</b>
33980	Heat treating of metal for the trade -----	1 879.3	1 747.4	1 838.1	1 785.5	1 652.6	1 387.0	1 105.9	704.1
<b>3399-</b>	<b>Primary metal products, n.e.c.</b> -----	<b>1 790.1</b>	<b>1 638.8</b>	<b>1 788.6</b>	<b>1 652.2</b>	<b>1 613.1</b>	<b>1 467.9</b>	<b>959.0</b>	<b>967.5</b>
33991	Metal powders, paste, and flakes -----	1 213.9	1 137.6	1 244.2	1 129.5	1 156.0	993.0	799.1	702.2
33992	Primary metal products, n.e.c. -----	409.9	325.7	345.2	342.3	277.2	311.9	119.9	144.7
33990	Primary metal products, n.e.c., n.s.k. -----	166.3	175.5	199.2	180.4	179.8	163.0	40.0	120.6

<sup>1</sup>Figures are estimates derived from a representative sample of manufacturing establishments. Standard errors associated with estimates are published in annual survey of manufactures publications for this period.

**Table 7. Materials Consumed by Kind: 1992 and 1987**

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

Material code	Material	1992		1987	
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)
<b>INDUSTRY 3351, COPPER ROLLING AND DRAWING</b>					
	<b>Materials, ingredients, containers, and supplies</b> -----	<b>(X)</b>	<b>4 252.7</b>	<b>(X)</b>	<b>3 389.2</b>
	Nonferrous shapes and forms, except castings, forgings, and fab. metal products:				
	Aluminum and aluminum-base alloy:				
	Ingot, pig, shot:				
333404	Unalloyed ----- 1,000 s tons--	(D)	(D)	12.5	17.4
333405	Alloyed ----- 1,000 s tons--	(D)	(D)		
335301	Sheet, plate, foil, and welded tubing ----- mil lb--	(D)	(D)	(D)	(D)
335405	Extruded shapes (including extruded rod, bar, pipe, tube, etc.) ----- mil lb--	1.3	1.7	(D)	(D)
330010	All other aluminum and aluminum-base alloy shapes and forms -----	(X)	(D)	(X)	(D)
	Copper and copper-base alloy:				
333102	Cathodes ----- 1,000 s tons--	1 167.1	957.1	775.5	804.8
333125	Wire bar ----- 1,000 s tons--	13.5	47.6	23.2	28.7
333130	Ingot and ingot bar ----- 1,000 s tons--	11.4	32.4	(D)	(D)
333135	All other copper and copper-base alloy shapes and forms ----- 1,000 s tons--	577.8	969.8	402.8	469.1
333973	Magnesium and magnesium-base alloy ----- 1,000 s tons--	(D)	(D)	(D)	(D)
333963	Nickel and nickel-base alloy ----- 1,000 s tons--	1.6	12.9	2.0	10.7
333978	Zinc and zinc-base alloy ----- 1,000 s tons--	51.9	70.5	59.1	48.4
333981	Molybdenum and molybdenum-base alloy ----- mil lb--	-	-	(D)	(D)
333983	Tin and tin-base alloy ----- mil lb--	*1.5	4.4	*1.5	5.2
333940	Titanium and titanium-base alloy ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
333904	Precious metals and precious metal alloy, including gold, silver, and platinum ----- 1,000 troy ounces--	(D)	(D)	(D)	(D)
335100	Brass ----- 1,000 s tons--	131.6	340.5	70.2	113.6
333960	All other nonferrous shapes and forms -----	(X)	37.5	(X)	(NA)
	Nonferrous metal scrap, excluding home scrap:				
	Aluminum and aluminum-base alloy:				
190021	From other establishments of your company ----- 1,000 s tons--	(D)	(D)	-	-
190022	From all other sources ----- 1,000 s tons--	(D)	(D)	(D)	(D)
190024	Copper and copper-base alloy ----- 1,000 s tons--	679.9	1 372.1	1 046.5	1 253.0
190080	Other nonferrous metal scrap ----- 1,000 s tons--	**17.1	20.1	(D)	(D)
970099	All other materials and components, parts, containers, and supplies -----	(X)	224.4	(X)	(D)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	132.0	(X)	140.3

See footnotes at end of table.

**33D-30 NONFERROUS METAL MILLS & PRIM. METAL**

**MANUFACTURES—INDUSTRY SERIES**



**Table 7. Materials Consumed by Kind: 1992 and 1987—Con.**

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

Material code	Material	1992		1987	
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)
<b>INDUSTRY 3353, ALUMINUM SHEET, PLATE, AND FOIL</b>					
	<b>Materials, ingredients, containers, and supplies -----</b>	<b>(X)</b>	<b>6 590.2</b>	<b>(X)</b>	<b>7 430.3</b>
	Nonferrous shapes and forms, except castings, forgings, and fab. metal products:				
	Aluminum and aluminum-base alloy:				
	Ingot, pig, shot:				
333404	Unalloyed ----- 1,000 s tons..	1 424.9	1 634.6	1 641.3	2 061.4
333405	Alloyed ----- 1,000 s tons..	999.8	1 743.1	1 996.0	2 584.2
335301	Sheet, plate, foil, and welded tubing ----- mil lb..	1 004.5	812.4	747.7	634.4
335405	Extruded shapes (including extruded rod, bar, pipe, tube, etc.) ----- mil lb..	(D)	(D)	-	-
330010	All other aluminum and aluminum-base alloy shapes and forms -----	(X)	255.1	(X)	-
	Copper and copper-base alloy:				
333102	Cathodes ----- 1,000 s tons..	-	-	(NA)	(NA)
333125	Wire bar ----- 1,000 s tons..	(D)	(D)	(NA)	(NA)
333130	Ingot and ingot bar ----- 1,000 s tons..	(D)	(D)	(D)	(D)
333135	All other copper and copper-base alloy shapes and forms ----- 1,000 s tons..	(S)	.5	(D)	(D)
333973	Magnesium and magnesium-base alloy ----- 1,000 s tons..	46.6	111.0	40.8	100.8
333963	Nickel and nickel-base alloy ----- 1,000 s tons..	-	-	(NA)	(NA)
333978	Zinc and zinc-base alloy ----- 1,000 s tons..	2.9	3.5	4.9	3.7
333981	Molybdenum and molybdenum-base alloy ----- mil lb..	-	-	(NA)	(NA)
333983	Tin and tin-base alloy ----- mil lb..	-	-	(NA)	(NA)
333940	Titanium and titanium-base alloy ----- 1,000 s tons..	.9	2.9	(NA)	(NA)
333904	Precious metals and precious metal alloy, including gold, silver, and platinum ----- 1,000 troy ounces..	(D)	(D)	(NA)	(NA)
335100	Brass ----- 1,000 s tons..	(D)	(D)	(NA)	(NA)
333960	All other nonferrous shapes and forms -----	(X)	25.5	(X)	(NA)
	Nonferrous metal scrap, excluding home scrap:				
	Aluminum and aluminum-base alloy:				
190021	From other establishments of your company ----- 1,000 s tons..	270.2	305.9	395.9	497.5
190022	From all other sources ----- 1,000 s tons..	1 168.6	1 168.3	823.7	1 011.3
190024	Copper and copper-base alloy ----- 1,000 s tons..	(D)	(D)	(D)	(D)
190080	Other nonferrous metal scrap ----- 1,000 s tons..	-	-	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	495.4	(X)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	-	(X)	76.8
<b>INDUSTRY 3354, ALUMINUM EXTRUDED PRODUCTS</b>					
	<b>Materials, ingredients, containers, and supplies -----</b>	<b>(X)</b>	<b>2 135.4</b>	<b>(X)</b>	<b>2 685.3</b>
	Nonferrous shapes and forms, except castings, forgings, and fab. metal products:				
	Aluminum and aluminum-base alloy:				
	Ingot, pig, shot:				
333404	Unalloyed ----- 1,000 s tons..	313.0	389.4	506.4	606.1
333405	Alloyed ----- 1,000 s tons..	*503.8	471.6	*832.2	1 013.5
335301	Sheet, plate, foil, and welded tubing ----- mil lb..	.8	6.0	(D)	( <sup>3</sup> )
335405	Extruded shapes (including extruded rod, bar, pipe, tube, etc.) ----- mil lb..	393.0	271.1	(S)	130.8
330010	All other aluminum and aluminum-base alloy shapes and forms -----	(X)	307.2	(X)	331.5
	Copper and copper-base alloy:				
333102	Cathodes ----- 1,000 s tons..	-	-	(NA)	(NA)
333125	Wire bar ----- 1,000 s tons..	(D)	(D)	(NA)	(NA)
333130	Ingot and ingot bar ----- 1,000 s tons..	(D)	(D)	(D)	(D)
333135	All other copper and copper-base alloy shapes and forms ----- 1,000 s tons..	.5	.9	(D)	(D)
333973	Magnesium and magnesium-base alloy ----- 1,000 s tons..	3.8	8.8	9.4	24.5
333963	Nickel and nickel-base alloy ----- 1,000 s tons..	(D)	(D)	(D)	(D)
333978	Zinc and zinc-base alloy ----- 1,000 s tons..	(D)	(D)	*3.7	3.3
333981	Molybdenum and molybdenum-base alloy ----- mil lb..	-	-	(NA)	(NA)
333983	Tin and tin-base alloy ----- mil lb..	(D)	(D)	(D)	(D)
333940	Titanium and titanium-base alloy ----- 1,000 s tons..	.7	2.3	(NA)	(NA)
333904	Precious metals and precious metal alloy, including gold, silver, and platinum ----- 1,000 troy ounces..	-	-	(NA)	(NA)
335100	Brass ----- 1,000 s tons..	-	-	(NA)	(NA)
333960	All other nonferrous shapes and forms -----	(X)	5.0	(X)	(NA)
	Nonferrous metal scrap, excluding home scrap:				
	Aluminum and aluminum-base alloy:				
190021	From other establishments of your company ----- 1,000 s tons..	57.0	66.9	134.6	153.8
190022	From all other sources ----- 1,000 s tons..	*157.4	165.9	166.1	201.6
190024	Copper and copper-base alloy ----- 1,000 s tons..	(D)	(D)	3.5	2.7
190080	Other nonferrous metal scrap ----- 1,000 s tons..	(D)	(D)	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	290.3	(X)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	135.2	(X)	231.8

See footnotes at end of table.

**Table 7. Materials Consumed by Kind: 1992 and 1987—Con.**

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

Material code	Material	1992		1987	
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)
<b>INDUSTRY 3355, ALUMINUM ROLLING AND DRAWING, N.E.C.</b>					
	<b>Materials, ingredients, containers, and supplies -----</b>	<b>(X)</b>	<b>628.0</b>	<b>(X)</b>	<b>381.0</b>
	Nonferrous shapes and forms, except castings, forgings, and fab. metal products:				
	Aluminum and aluminum-base alloy:				
	Ingot, pig, shot:				
333404	Unalloyed ----- 1,000 s tons--	(D)	(D)	(D)	(D)
333405	Alloyed ----- 1,000 s tons--	7.5	9.4	(D)	(D)
335301	Sheet, plate, foil, and welded tubing ----- mil lb--	(D)	(D)	(D)	(D)
335405	Extruded shapes (including extruded rod, bar, pipe, tube, etc.) ----- mil lb--	(D)	(D)	(D)	(D)
330010	All other aluminum and aluminum-base alloy shapes and forms -----	(X)	(D)	(X)	—
	Copper and copper-base alloy:				
333102	Cathodes ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
333125	Wire bar ----- 1,000 s tons--	—	—	(NA)	(NA)
333130	Ingot and ingot bar ----- 1,000 s tons--	—	—	(NA)	(NA)
333135	All other copper and copper-base alloy shapes and forms ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
333973	Magnesium and magnesium-base alloy ----- 1,000 s tons--	1.2	3.2	(NA)	(NA)
333963	Nickel and nickel-base alloy ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
333978	Zinc and zinc-base alloy ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
333981	Molybdenum and molybdenum-base alloy ----- mil lb--	—	—	(NA)	(NA)
333983	Tin and tin-base alloy ----- mil lb--	—	—	(NA)	(NA)
333940	Titanium and titanium-base alloy ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
333904	Precious metals and precious metal alloy, including gold, silver, and platinum ----- 1,000 troy ounces--	—	—	(NA)	(NA)
335100	Brass ----- 1,000 s tons--	—	—	(NA)	(NA)
333960	All other nonferrous shapes and forms -----	(X)	7.7	(X)	(NA)
	Nonferrous metal scrap, excluding home scrap:				
	Aluminum and aluminum-base alloy:				
190021	From other establishments of your company ----- 1,000 s tons--	23.0	23.1	(D)	(D)
190022	From all other sources ----- 1,000 s tons--	(D)	(D)	(D)	(D)
190024	Copper and copper-base alloy ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
190080	Other nonferrous metal scrap ----- 1,000 s tons--	(D)	(D)	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	(D)	(X)	(D)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	66.0	(X)	104.0
<b>INDUSTRY 3356, NONFERROUS ROLLING AND DRAWING, N.E.C.</b>					
	<b>Materials, ingredients, containers, and supplies -----</b>	<b>(X)</b>	<b>1 280.3</b>	<b>(X)</b>	<b>1 687.3</b>
	Nonferrous shapes and forms, except castings, forgings, and fab. metal products:				
	Ingot, pig, shot:				
	Aluminum and aluminum-base alloy:				
333404	Unalloyed ----- 1,000 s tons--	(D)	(D)	7.2	9.7
333405	Alloyed ----- 1,000 s tons--	(D)	(D)	(Z)	(Z)
335301	Sheet, plate, foil, and welded tubing ----- mil lb--	(S)	.2	—	—
335405	Extruded shapes (including extruded rod, bar, pipe, tube, etc.) ----- mil lb--	(D)	(D)	—	—
330010	All other aluminum and aluminum-base alloy shapes and forms -----	(X)	4.4	(X)	(D)
	Copper and copper-base alloy:				
333102	Cathodes ----- 1,000 s tons--	(D)	(D)	(D)	(D)
333125	Wire bar ----- 1,000 s tons--	—	—	(D)	(D)
333130	Ingot and ingot bar ----- 1,000 s tons--	—	—	(D)	(D)
333135	All other copper and copper-base alloy shapes and forms ----- 1,000 s tons--	4.0	11.6	(D)	(D)
333973	Magnesium and magnesium-base alloy ----- 1,000 s tons--	21.2	57.8	8.8	27.7
333963	Nickel and nickel-base alloy ----- 1,000 s tons--	(S)	145.3	*36.4	158.1
333978	Zinc and zinc-base alloy ----- 1,000 s tons--	33.2	38.1	(D)	(D)
333981	Molybdenum and molybdenum-base alloy ----- mil lb--	2.8	15.8	4.1	15.9
333983	Tin and tin-base alloy ----- mil lb--	(S)	23.1	7.9	24.3
333940	Titanium and titanium-base alloy ----- 1,000 s tons--	*18.8	101.5	(NA)	(NA)
333904	Precious metals and precious metal alloy, including gold, silver, and platinum ----- 1,000 troy ounces--	838.4	248.8	(S)	527.2
335100	Brass ----- 1,000 s tons--	(D)	(D)	1.6	1.3
333960	All other nonferrous shapes and forms -----	(X)	167.1	(X)	(NA)
	Nonferrous metal scrap, excluding home scrap:				
	Aluminum and aluminum-base alloy:				
190021	From other establishments of your company ----- 1,000 s tons--	—	—	—	—
190022	From all other sources ----- 1,000 s tons--	—	—	(D)	(D)
190024	Copper and copper-base alloy ----- 1,000 s tons--	(D)	(D)	(D)	(D)
190080	Other nonferrous metal scrap ----- 1,000 s tons--	9.9	16.4	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	256.0	(X)	(D)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	155.5	(X)	183.9

See footnotes at end of table.

**Table 7. Materials Consumed by Kind: 1992 and 1987—Con.**

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

Material code	Material	1992		1987	
		Quantity <sup>1</sup>	Delivered cost (million dollars)	Quantity <sup>1</sup>	Delivered cost (million dollars)
	<b>INDUSTRY 3357, NONFERROUS WIREDRAWING AND INSULATING</b>				
	Materials, ingredients, containers, and supplies -----	(X)	7 747.2	(X)	6 333.0
	Shapes and forms, except castings, forgings, and fabricated metal products:				
	Steel:				
331501	Bare wire ----- 1,000 s tons..	**70.9	103.9	33.8	30.1
331003	All other steel shapes and forms ----- 1,000 s tons..	36.7	40.2	(NA)	(NA)
	Copper and copper-base alloy:				
	Rods:				
335133	Unalloyed ----- mil lb..	2 127.1	2 194.8	1 915.8	1 484.9
335135	Alloyed ----- mil lb..	357.6	307.9	*121.5	97.7
335112	Wire for redrawing ----- mil lb..	249.8	272.5	161.8	152.4
335725	Bare wire, electrical (except wire for redrawing) ----- mil lb..	(D)	(D)	258.1	292.1
333125	Wire bar ----- 1,000 s tons..	(D)	(D)	42.0	36.5
335794	Insulated copper wire and cable -----	(X)	125.2	(X)	26.2
333102	Cathodes ----- 1,000 s tons..	151.1	159.0	341.2	256.6
335120	All other copper and copper-base alloy shapes and forms ----- mil lb..	(S)	164.4	(D)	(D)
	Aluminum and aluminum-base alloys:				
335009	Rods ----- mil lb..	521.4	344.7	530.9	351.9
335511	Wire for redrawing ----- mil lb..	22.5	21.4	15.5	20.3
335718	Bare wire, except for redrawing ----- mil lb..	41.8	52.7	**72.5	58.4
335050	All other aluminum and aluminum-base alloy shapes and forms ----- mil lb..	2 958.1	145.2	116.0	101.3
333976	Refined unalloyed tin -----	(X)	6.7	(X)	6.9
335092	All other nonferrous shapes and forms ----- mil lb..	185.3	55.6	87.0	52.2
	Chemicals and allied products:				
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc. ----- mil lb..	1 287.3	891.9	*1 179.5	744.4
282202	Synthetic rubber ----- mil lb..	635.0	93.4	*69.0	66.0
280025	All other chemical and allied products ----- mil lb..	*62.4	76.3	(NA)	(NA)
	Stone, clay, glass, and concrete products:				
323110	Optical fiber, data and nondata transmission -----	(X)	246.3	(X)	(NA)
329610	Fiberglass insulating materials -----	(X)	11.6	(X)	6.8
320010	All other stone, clay, glass, and concrete products -----	(X)	5.5	(X)	(NA)
083100	Natural rubber ----- mil lb..	11.2	10.7	(D)	(D)
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	64.7	(X)	43.3
228102	Cotton yarns ----- mil lb..	(S)	8.3	5.6	13.6
364350	Connectors -----	(X)	38.4	(X)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	1 031.2	(X)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>2</sup> -----	(X)	824.8	(X)	726.1
	<b>INDUSTRY 3398, METAL HEAT TREATING</b>				
	(Material data were not collected for this industry.)				
	<b>INDUSTRY 3399, PRIMARY METAL PRODUCTS, N.E.C.</b>				
	(Material data were not collected for this industry.)				

<sup>1</sup>For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: \*10 to 19 percent estimated; \*\*20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

<sup>2</sup>Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

<sup>3</sup>For 1987, material codes were combined to avoid disclosing data for individual companies.

## Appendix A. Explanation of Terms

This appendix is in two sections. Section 1 includes items requested of all establishments mailed census of manufactures forms including annual survey of manufactures (ASM) forms. Note that this section also includes several items (number of establishments and companies, value added, classes of products, and specialization and coverage ratios) not included on the report forms but derived from information collected on the forms. Section 2 covers supplementary items requested only from establishments included in the ASM sample. Results of the supplementary ASM inquiries are included in table 3c of this report.

### SECTION 1. ITEMS COLLECTED OR DERIVED BASED ON ALL CENSUS OF MANUFACTURES (INCLUDING ASM) REPORT FORMS

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

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

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

In this report, data are shown for establishments in operation at any time during the year. A comparison with the number of establishments in operation at the end of the year will be provided in the Introduction of the *General Summary* subject report.

**Employment and related items.** The report forms requested separate information on production workers for a specific payroll period within each quarter of the year and on other employees as of the payroll period which included the 12th of March.

**All employees.** This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave,

paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

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

**All other employees.** This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver salespersons), sales delivery (highway truckdrivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office function, 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 to the plant and utilized as a separate work force.

In addition to reports sent to operating manufacturing establishments, information on employment during the payroll period which included March 12 and annual payrolls also was requested of auxiliary units (e.g., administrative offices, warehouses, and research and development

laboratories) of multiestablishment companies. However, these figures are not included in the totals for individual industries shown in this report. They are included in the *General Summary* and geographic area reports as a separate category.

**Payroll.** This item includes the gross earnings of all employees on the payrolls of operating manufacturing establishments paid in the calendar year 1992. 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' supplemental labor costs, both those required by Federal and State laws and those incurred voluntarily or as part of collective bargaining agreements. (Supplemental labor costs are explained later in this appendix.)

As in the case of employment figures, the payrolls of separate auxiliary units of multiestablishment companies are not included in the totals for individual industries or industry groups.

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

**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.

The important components of this cost item are (1) 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) electric energy purchased, (3) fuels consumed for heat, power, or the generation of electricity, (4) work done by

others on materials or parts furnished by manufacturing establishments (contract work), and (5) products bought and resold in the same condition. (See discussion of duplication of data below.)

**Specific materials consumed.** In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information on the establishments consuming less than a specified amount (usually \$25,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which either administrative records or short forms were used was imputed as "not specified by kind." (See Census of Manufactures for the importance of administrative records in the industry.)

**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 resold without further processing. Included are all items made by or for the establishments from materials 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. (See discussion of duplication of data below.)

**Individual products.** As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1992 census program, information was collected on the output of almost 11,000 individual product items. The term "product," as used in the census of manufactures, represents the finest level of detail for which output information was requested. Consequently, it is not necessarily synonymous with the term "product" as used in the marketing sense. In some cases, it may be much more detailed and, in other cases, it is more aggregative. For example, "pharmaceutical preparations" was distributed into over 100 terms; whereas, "motor gasoline" was reported as a single item.

Approximately 6,300 of the product items were listed separately on the 1992 census report forms. Data for

about 4,500 products were obtained in the monthly, quarterly, or annual surveys comprising the Current Industrial Reports series of the Census Bureau. Totals for the year 1992 for these items, as derived from the commodity surveys, are shown in the "products shipped" table.

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 1987 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 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.

**Classes of products.** To summarize the product information, the separate products were aggregated into classes of products that, in turn, were grouped into all primary products of each industry. The code structure used is a seven-digit number for the individual product, a five-digit number for the class of product, and a four-digit number for the total primary products in an industry. (See Census of Manufactures, Industry Classification of Establishments, for application of the coding structure to the assignment of SIC codes for establishments.)

In the 1992 census, the 11,000 products were grouped into approximately 1,500 separate classes on the basis of general similarity of manufacturing processes, types of materials used, etc. However, the grouping of products was affected by the economic significance of the class and, in some cases, dissimilar products were grouped because the products were not sufficiently significant to warrant separate classes.

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

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

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

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

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

**Value added by manufacture.** 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 (see footnote in table 1a), 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.

**New and used capital expenditures.** For establishments in operation and any known plants under construction, manufacturers were asked to report their new expenditures for (1) permanent additions and major alterations to

manufacturing establishments, and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

The totals for new expenditures include expenditures leased from nonmanufacturing concerns through capital leases. New facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations are excluded. Also excluded are expenditures for used plant and equipment (although reported in the census), expenditures for land, and cost of maintenance and repairs charged as current operating expenses.

Manufacturers also were requested to report the value of all used buildings and equipment purchased during the year at the purchase price. For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. Furthermore, if the establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported under used capital expenditures.

Total expenditures for used plant and equipment is a universe figure; it is collected on all census forms. However, the breakdown of this figure between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. The data for total new capital expenditures, new building expenditures, and new machinery expenditures, as well as the data for total used expenditures, are shown in table 3b.

**End-of-year inventories.** Respondents were asked to report their 1991 and 1992 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). 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.

## SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

The following items were collected only from establishments included in the ASM sample:

**Supplemental labor costs.** Supplemental labor costs 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

Because of this change in reporting instructions, the 1982 through 1992 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown in table 1a of this report and in historical census of manufactures and annual survey of manufactures publications.

In using inventory data by stage of fabrication for "all industries" and at the two-digit industry 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 another 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 individual industries, industry groups, and "all manufacturing", which are aggregates of figures reported by establishments in specified industries.

**Specialization and coverage ratios.** These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

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

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.

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.

While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records generally do not provide reliable figures on net employee benefits of these types.

**Retirements of depreciable assets.** Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1992. 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.

**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.

**Rental payments.** Total rental payments is 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.

**Depreciable assets.** Total value of gross depreciable assets is collected on all census forms. However, the detail for depreciable assets is collected only on the ASM forms. The data encompass all fixed depreciable assets on the books of establishments at the beginning and end of the year. 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 new and used capital expenditures, less retirements, equalled assets at the end of the year.

**New and used capital expenditures.** The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)

**Quantity of electric energy consumed for heat and power.** Data on the cost of purchased electric energy are collected on all census forms. However, data on the quantity of purchased electric energy are collected only on the ASM forms. 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.

**Breakdown of new capital expenditures for machinery and equipment.** ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

**Foreign content of cost of materials.** Establishments included in the ASM sample panel were requested to provide information on foreign-made materials purchased or transferred from foreign sources. This includes materials acquired from a central warehouse or other domestic establishment of the same company but made in an operation outside of the 50 States, District of Columbia, Puerto Rico, or U.S. territories.



**Cost of purchased services.** ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, communication services, legal services, accounting and bookkeeping services, advertising, software and other data processing services, and refuse removal. Each of these items reflect the costs paid directly by the establishment, and exclude salaries paid to employees of the establishment for these services.

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

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

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

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

Three basic approaches were utilized to produce these statistics.

1. For items 1 through 6, data were estimated (imputed) for all non-ASM establishments using the available data in the establishment record and industry-based parameters. The statistics were then generated by simply tabulating all census records including the imputed value for non-ASM establishments and the unweighted value for ASM establishments. Separate imputation rates were developed and are shown in the table. For quantity of purchased electricity for heat and power (item 7), a similar procedure was used; however, the imputation parameters were geographically-based instead of industry-based. For quantities of generated less sold electricity, no imputation was performed for non-ASM establishments. The estimates for these items are simply tabulations of unweighted ASM values.

Since the published statistics for these items were developed from the complete census universe and not just the ASM establishments, there are no sampling variances associated with these statistics. However, there is an unknown level of bias for each of the items due to the imputation of the non-ASM establishments. This bias is felt to be small due to the strong correlation between the items being imputed and the collected items that were used to generate the impute values.

2. For items 8 and 9, the estimates were developed using a ratio estimation methodology. For item 8, an estimate of the breakout of new capital expenditures for machinery and equipment into the three categories was made from ASM establishments reporting these categories. The estimated proportions were then applied to the corresponding census value for new capital expenditures for machinery and equipment to produce the estimates.

The estimates for item 9, foreign content of cost of materials, were developed in a similar manner based on costs of parts, supplies, and components (item 5a) as the control total for the three categories.

For items 8 and 9, an adjustment ratio of the following form was computed:

$$R_j = \frac{NMc}{TMEasm}$$

where:

NMc = the census value of new capital expenditures for machinery and equipment

TMEasm = the weighted ASM value of new capital expenditures for machinery and equipment from reporters of the detailed breakout data

3. For item 10, cost of purchased services, the estimates were made by simply tabulating weighted data for all the ASM records that reported the item. A response coverage ratio (a measure of the extent to which respondents reported for each item) is shown in table 3c for the types of services. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight, see appendix B) for those ASM establishments that reported the specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

## Appendix B.

# Annual Survey of Manufactures Sampling and Estimating Methodologies

### DESCRIPTION OF SURVEY SAMPLE

The annual survey of manufactures (ASM) contains two components. The mail portion of the survey is a probability sample of about 64,000 manufacturing establishments selected from a total of about 216,000 establishments. These 216,000 establishments represent all manufacturing establishments of multiunit companies and all single-establishment companies mailed schedules in the 1987 Census of Manufactures. This mail portion is supplemented annually by a Social Security Administration list of new manufacturing establishments opened after 1987 and a list of new multiunit manufacturing establishments identified from the Census Bureau's Company Organization Survey.

For the current panel, all establishments of companies with 1987 shipments in manufacturing in excess of \$500 million were included in the survey panel with certainty. There are approximately 500 such companies collectively accounting for approximately 18,000 establishments. For the remaining portion of the mail survey, the establishment was defined as the sampling unit. For this portion, all establishments with 250 employees or more and establishments with a very large value of shipments also were included in the survey panel with certainty. A total of 12,100 establishments were selected from this portion of the universe with certainty. Therefore, of the 64,000 manufacturing establishments included in the ASM panel, approximately 31,000 are selected with certainty. These certainty establishments collectively account for approximately 80 percent of the total value of shipments in the 1987 census.

Smaller establishments in the remaining portion of the mail survey were sampled with probabilities ranging from 0.999 to 0.005 in accordance with mathematical theory for optimum allocation of a sample. The probabilities of selection assigned to the smaller establishments were proportional to measures of size determined for each establishment. The measures of size depend directly upon each establishment's 1987 product class values and the historic variability of the year-to-year shipments of each product class. Product classes displaying more volatile year-to-year change in shipments at the establishment level were sampled at a heavier rate.

This method of assigning measures of size was used in order to maximize the precision (that is, minimize the variance of estimates of the year-to-year change) in the value of product class shipments. Implicitly, it also gave weight differences in employment, value added, and other

general statistics, since these are highly correlated with value of shipments. Individual sample selection probabilities were obtained by multiplying each establishment's final measure of size by an overall sampling fraction coefficient calculated to yield a total expected sample size.

The sample selection procedure gave each establishment in the sampling frame an independent chance of selection. This method of independent selection permits the rotation of small establishments out of a given sample panel without introducing a bias into the survey estimates.

The nonmail portion of the survey includes all single-establishment companies that were tabulated as administrative records in the 1987 Census of Manufactures. Although this portion contained approximately 134,000 establishments, it accounted for less than 2 percent of the estimate for total value of shipments at the total manufacturing level. This portion was not sampled; rather, the data for every establishment in this group were estimated based on selected information obtained annually from the administrative records of the Internal Revenue Service and the Social Security Administration. This administrative-records information, which includes payroll, total employment, industry classification, and physical location of the establishment, was obtained under conditions which safeguard the confidentiality of both tax and census records. Estimates of data other than payroll and employment for these small establishments were developed from industry averages.

The corresponding estimates for the mail and nonmail establishments were added together, along with the base-year differences, as defined in the Description of Estimating Procedure section, to produce the figures shown in this publication.

### DESCRIPTION OF ESTIMATING PROCEDURES

Most of the ASM estimates for the years 1988-1991 were computed using a difference estimation procedure. For each item, a base-year difference was developed. This base-year difference is equal to the difference between the 1987 census published number for an item total and the linear ASM estimate of the total for 1987. The ASM linear estimate was obtained by multiplying each sample establishment's data by its sample weight (the reciprocal of its probability of selection) and summing the weighted values.

These base-year differences were then added to the corresponding current-year linear estimates, which include the sum of the estimates for the mail and nonmail

establishments, to produce the estimates for the years 1983-1991. Estimates developed by this procedure usually are far more reliable than comparable linear estimates developed from the current sample data alone.

However, the 1992 sample estimates for the purchased service items, shown in table 3c, are strictly ASM linear estimates developed only from ASM establishments that reported the specific item.

The remaining estimates in table 3c, showing the breakdown of expenditures for new machinery and equipment and costs of parts (separated into purchases from foreign sources and purchases from domestic sources), were computed as ratio estimates. To do this, linear estimates of the new machinery detail items were developed from the ASM establishments and were ratio adjusted to the corresponding census total for new machinery. In a similar fashion, the ASM linear estimates of the detailed purchased materials items were ratio adjusted to the corresponding census total for cost of parts.

### QUALIFICATIONS OF THE DATA

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

The particular sample selected for the ASM is one of a large number of 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 theoretical, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. They are presented 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:

1. From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.
2. From two standard errors below to two standard errors above the derived estimate for about 19 of 20 of all possible samples.
3. 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 as 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 in the course of 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 only moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown.

The concept of complete coverage under the conditions prevailing for the ASM is not identical to the complete coverage of the census of manufactures, as the censuses have been conducted. Nearly all types of operational errors that affect the ASM also occur in the censuses. The ASM and the censuses, are conducted under quite different conditions, and operational errors can be better controlled in the ASM than in the censuses. As a result, for many of the census figures, the errors are of the same order of size as the total errors of the corresponding annual survey estimates. The differences between the census and ASM operating conditions also disturb, to some degree, the comparability of the ASM and census data.

Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be of limited reliability. However, the figure may be combined with higher-level totals, creating a broader aggregate, which then may be of acceptable reliability.

# Appendix C. Product Code Reference Tables

## Part 1. Comparability of Product Classes and Product Codes That Changed: 1992 to 1987

1992	1987	1992	1987	1992	1987	1992	1987
33121 97	33121 41	33157 00	33157 21	33412 24	33412 20	33551 00	33551 11
33121 97	33121 81	33157 00	33157 22	33412 24	33412 23	33551 00	33551 51
33121 97	33121 86	33157 00	33157 23			33551 00	33551 61
		33157 00	33157 41	33413 99	33413 71	33551 00	33551 65
3312A 17	3312A 11	33157 00	33157 42	33413 99	33413 98		
3312A 17	3312A 23	33157 00	33157 43			33563 86	33563 85
3312A 26	3312A 25					33563 86	33563 87
3312A 26	3312A 27	33159 42	33159 41				
		33159 42	33159 44	33414 34	33414 10	33569 57	33569 55
3312B 62	3312B 61	33159 42	33159 45	33414 34	33414 14	33569 57	33569 59
3312B 62	3312B 63	33159 42	33159 48	33414 34	33414 17	33569 93	33562 78
3312B 66	3312B 65	33159 63	33159 61	33414 44	33414 20	33569 93	33569 91
3312B 66	3312B 67	33159 63	33159 65	33414 44	33414 23	33569 97	33569 71
				33414 44	33414 26	33569 97	33569 98
33134 08	33131	33212 40	33212 32			33571 00	33571 11
33134 08	33131 00	33212 40	33212 34			33571 00	33571 51
		33212 40	33212 39	33415 25	33415 11	33571 00	33571 61
33151 25	33151 22			33415 25	33415 81	33571 00	33571 65
33151 25	33151 51	33312 30	33312 20	33415 35	33415 31		
33151 34	33151 23	33312 30	33312 23	33415 35	33415 71	33572 81	33572 21
33151 34	33151 33	33312 30	33312 26	33415 45	33415 51		
33151 34	33151 35			33415 45	33415 89		
		33392 34	33392 31			33575 00	33575 17
33152 13	33152 12	33392 34	33392 37			33575 00	33575 57
33152 13	33152 14	33392 34	33392 39			33575 00	33575 65
		33392 44	33392 41	33416 33	33416 21		
33156 13	33156 15	33392 44	33392 43	33416 33	33416 61	33660 26	33660 23
33156 13	33156 17	33392 44	33392 49	33416 35	33416 31		
33156 21	33156 22	33392 44		33416 35	33416 69	33690 23	33690 21
33156 21	33156 24	33412 24	33412 17	33416 97	33416 43	33690 23	33690 25
				33416 97	33416 99	33690 85	33690 98
						33690 97	33690 98

## Part 2. Comparability of Product Classes and Product Codes That Changed: 1987 to 1992

1987	1992	1987	1992	1987	1992	1987	1992
33121 41	33121 97	33157 21	33157 00	33412 20	33412 24	33551 65	33551 00
33121 81	33121 97	33157 22	33157 00	33412 23	33412 24		
33121 86	33121 97	33157 23	33157 00			33562 78	33569 93
		33157 41	33157 00	33413 71	33413 99		
3312A 11	3312A 17	33157 42	33157 00	33413 98	33413 99	33563 85	33563 86
3312A 23	3312A 17	33157 43	33157 00			33563 87	33563 86
3312A 25	3312A 26			33414 10	33414 34		
3312A 27	3312A 26	33159 41	33159 42	33414 14	33414 34	33569 55	33569 57
		33159 44	33159 42	33414 17	33414 34	33569 59	33569 57
3312B 61	3312B 62	33159 45	33159 42	33414 20	33414 44	33569 71	33569 97
3312B 63	3312B 62	33159 48	33159 42	33414 23	33414 44	33569 91	33569 93
3312B 65	3312B 66	33159 61	33159 63	33414 26	33414 44	33569 97	33569 98
3312B 67	3312B 66	33159 65	33159 63				
				33415 11	33415 25	33571 11	33571 00
33131	33134 08	33212 32	33212 40	33415 31	33415 35	33571 51	33571 00
33131 00	33134 08	33212 34	33212 40	33415 51	33415 45	33571 61	33571 00
		33212 39	33212 40	33415 71	33415 35	33571 65	33571 00
33151 22	33151 25			33415 81	33415 25		
33151 23	33151 34	33312 20	33312 30	33415 89	33415 45	33572 21	33572 81
33151 33	33151 34	33312 23	33312 30				
33151 35	33151 34	33312 26	33312 30	33416 21	33416 33	33575 17	33575 00
33151 51	33151 25			33416 31	33416 35	33575 57	33575 00
		33392 31	33392 34	33416 43	33416 97	33575 65	33575 00
33152 12	33152 13	33392 37	33392 34	33416 61	33416 33		
33152 14	33152 13	33392 39	33392 34	33416 69	33416 35	33660 23	33660 26
		33392 41	33392 44	33416 99	33416 97		
33156 15	33156 13	33392 43	33392 44			33690 21	33690 23
33156 17	33156 13	33392 49	33392 44	33551 11	33551 00	33690 25	33690 23
33156 22	33156 21			33551 51	33551 00	33690 98	33690 85
33156 24	33156 21	33412 17	33412 24	33551 61	33551 00	33690 98	33690 97

### Part 3. Current Industrial Reports by Product Code

[Current Industrial Reports (CIR) data are contained in the publication *Manufacturing Profiles: 1992* [MP-1(92)] issued August 1994 and available through the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. To access the most current CIR data electronically, dial the Census-BEA Electronic Forum at 301-457-2310. Your communications modem should be set as follows: Baud rate: 1200, 2400, 9600; Parity: None; Data bits: 8; Stop bits: 1; Duplex: full. Before making your first call, decide on a password and be prepared to provide the following regarding your computer: PC brand name, monitor screen dimensions (e.g., 80 columns by 24 lines), monitor color support, modem baud rate, and PC communications software package. Call the voice number, 301-457-1242, for further bulletin board assistance]

Product code	Current Industrial Report	Product code	Current Industrial Report
3312200	MA33B, Steel Mill Products	3316700	MA33B, Steel Mill Products
3312300	MA33B, Steel Mill Products	3316800	MA33B, Steel Mill Products
3312400	MA33B, Steel Mill Products	3317000	MA33B, Steel Mill Products
3312C00	MA33B, Steel Mill Products	3357600	MA33L, Insulated Wire and Cable
3315113	MA33B, Steel Mill Products	3357700	MA33L, Insulated Wire and Cable
		3357800	MA33L, Insulated Wire and Cable
3315134	MA33B, Steel Mill Products	3357900	MA33L, Insulated Wire and Cable
3315500	MA33B, Steel Mill Products	3357A00	MA33L, Insulated Wire and Cable
3315621	MA33B, Steel Mill Products	3357B00	MA33L, Insulated Wire and Cable
3315771	MA33B, Steel Mill Products	3357C00	MA33L, Insulated Wire and Cable
3315951	MA33B, Steel Mill Products	3357D00	MA33L, Insulated Wire and Cable
3315955	MA33B, Steel Mill Products	3357E00	MA33L, Insulated Wire and Cable

# Publication Program

## 1992 CENSUS OF MANUFACTURES

Publications of the 1992 Census of Manufactures, containing preliminary and final data on manufacturing establishments in the United States, are described below. Publications order forms for the specific reports may be obtained from any Department of Commerce district office or from Data User Services Division, Customer Services, Bureau of the Census, Washington, DC 20233-8300.

### Preliminary Reports

#### Industry series—83 reports (MC92-I-20A(P) to -39D(P))

Preliminary industry data are issued in 83 separate reports covering 459 industries. Preliminary summary data for the United States and States are released in one report.

### Final Reports

#### Industry series—83 reports (MC92-1-20A to -39D)

Each of the 83 reports provides information for a group of related industries ("dairy products" includes industries for butter, cheese, milk, etc.). Final figures for the United States are shown for each of the 459 manufacturing industries on quantity and value of products shipped and materials consumed, cost of fuels and electric energy, capital expenditures, assets, rents, inventories, employment, payroll, payroll supplements, hours worked, value added by manufacture, number of establishments, and number of companies. Comparative statistics for earlier years are provided where available.

For each industry, data on value of shipments, value added by manufacture, capital expenditures, employment, and payroll are shown by employment-size class of establishment, State, and degree of primary product specialization.

#### Geographic area series—51 reports (MC92-A-1 to -51)

A separate report is being published for each State and the District of Columbia. Each report presents data for industry groups and industries on value of shipments, cost of materials, value added by manufacture, employment, payroll, hours worked, new capital expenditures, and number of manufacturing establishments for the State, MA's, counties, and selected places. Comparative statistics for earlier census years are shown for the State and large MA's. Manufacturing totals are presented for each county and for places with significant manufacturing activity. Detailed statistics (including inventories, assets, rents, and energy costs) are presented only in statewide totals.

#### Subject series—3 reports (MC92-S-1 to -3)

Each of the three reports contains detailed statistics for an individual subject, such as concentration ratios in manufacturing, manufacturers' shipments to the Federal Government, and a general national-level summary.

#### Reference series—1 report (MC92-R-1)

The *Numerical List of Manufactured and Mineral Products* includes a description of the principal products and services published in the 1992 Censuses of Manufactures and Mineral Industries.

#### Location of Manufacturing Plants—1 report (MC92-LM)

This report includes data for number of establishments by four-digit SIC industry and by employment-size class for counties, incorporated places of 2,500 inhabitants or more, and Zip Codes for each State. This report is available only on compact disc-read only memory (CD-ROM).

#### Analytical Reports—2 reports (AR92-1 and -2)

##### Exports From Manufacturing Establishments (AR92-1)

This report presents data on exports by two- and three-digit SIC industry groups for the United States and States. Information is presented on value of direct report shipments and estimates of the employment required to manufacture these products. Included are estimates of employment in manufacturing and nonmanufacturing establishments that supply parts, materials, and services for production of manufactured exports.

##### Selected Characteristics of Manufacturing Establishments That Export (AR92-2)

This report presents data on the number of manufacturing companies and establishments that export by major group, State, employment size, and ratios of exports to shipments.

### Electronic Media

All data included in the printed reports are available on CD-ROM. The CD-ROM's provide the same information found in the reports as well as additional information not published in the final reports, such as location of manufacturing plants. Electronic media products are available for users who wish to summarize, rearrange, or process large amounts of data. These products, with corresponding technical documentation, are sold by Data User Services Division, Customer Services, Bureau of the Census, Washington, DC 20233-8300.

## OTHER ECONOMIC CENSUSES REPORTS

Data on retail trade, wholesale trade, financial, insurance, real estate, service industries, construction industries, mineral industries, transportation, communications, utilities, enterprise statistics, minority-owned businesses, and women-owned businesses also are available from the 1992 Economic Census. A separate series of reports covers the census of outlying areas—Puerto Rico, Virgin Islands of the United States, Guam, and the Commonwealth of the Northern Mariana Islands. Separate announcements describing these reports are available free of charge from Data User Services Division, Customer Services, Bureau of the Census, Washington, DC 20233-8300.