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**Title: 1992 Census of Manufactures  
Grain Mill Products**

**U.S. Department of Commerce**

**June 1995**

# 1992 Census of Manufactures

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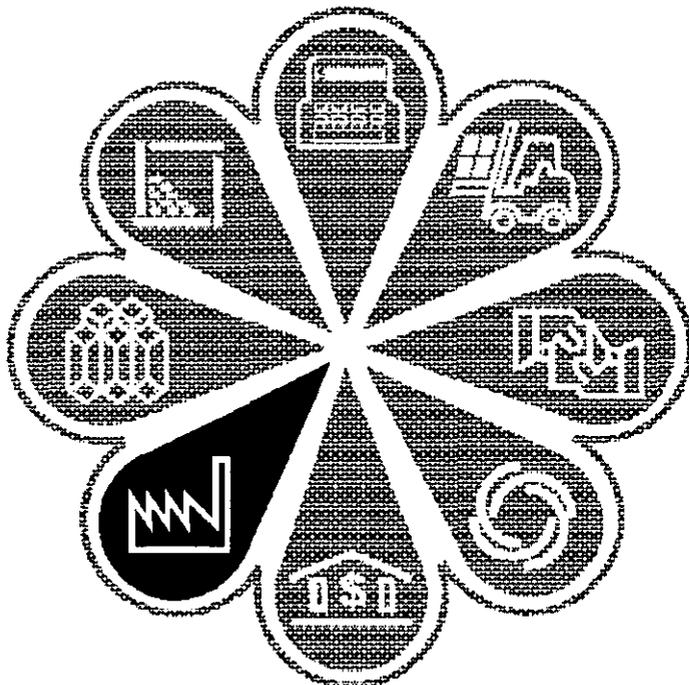
MC92-I-20D

INDUSTRY SERIES

## Grain Mill Products

Industries 2041, 2043, 2044, 2045, 2046,  
2047, and 2048

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# 1992 Census of Manufactures

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BUREAU OF THE CENSUS  
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**If you have any questions concerning the statistics in this report, call 301-457-4651.**



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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

MANUFACTURES—INDUSTRY SERIES

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.

INTRODUCTION III

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

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

<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.

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.

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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.

# Contents

## Grain Mill Products

[Page numbers listed here omit the prefix that appears as part of the number of each page]

	Page
Introduction to the Economic Census.....	III
Census of Manufactures .....	V
Users' Guide for Locating Statistics in This Report by Table Number .....	X
Description of Industries and Summary of Findings .....	3

### TABLES

#### Industry Statistics

1a. Historical Statistics for the Industry: 1992 and Earlier Years.....	9
1b. Selected Operating Ratios for the Industry: 1992 and Earlier Years .....	10
2. Industry Statistics for Selected States: 1992 and 1987 .....	11
3a. Summary Statistics for the Industry: 1992 .....	14
3b. Gross Book Value of Depreciable Assets, Capital Expenditures, Retirements, Depreciation, and Rental Payments: 1992 .....	14
3c. Supplemental Industry Statistics Based on Sample Estimates: 1992 .....	15
4. Industry Statistics by Employment Size of Establishment: 1992 .....	16
5a. Industry Statistics by Industry and Primary Product Class Specialization: 1992 ...	17

#### Product Statistics

5b. Industry-Product Analysis—Value of Industry and Primary Product Shipments; Specialization and Coverage Ratios: 1992 and Earlier Census Years .....	18
6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1992 and 1987 .....	20
6a-2. Selected Products Primary to More Than One Industry—Quantity and Value of Shipments by Industry: 1992 and 1987 .....	25
6b. Product Classes—Value of Shipments by All Producers for Specified States: 1992 and 1987 .....	26
6c. Historical Statistics for Product Classes—Value Shipped by All Producers: 1992 and Earlier Years .....	29

#### Material Statistics

7. Materials Consumed by Kind: 1992 and 1987 .....	30
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### APPENDIXES

A. Explanation of Terms .....	A-1
B. Annual Survey of Manufactures Sampling and Estimating Methodologies .....	B-1
C. Product Code Reference Tables .....	C-1

Publication Program.....	Inside back cover
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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

2041	Flour and Other Grain Mill Products
2043	Cereal Breakfast Foods
2044	Rice Milling
2045	Prepared Flour Mixes and Doughs
2046	Wet Corn Milling
2047	Dog and Cat Food
2048	Prepared Feeds, 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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS

This industry is made up of establishments primarily engaged in milling flour or meal from grain except rice. Establishments primarily engaged in manufacturing prepared flour mixes or doughs from purchased ingredients are classified in industry 2045, and those milling rice are classified in industry 2044. Products of this industry also are collected in the Current Industrial Report (CIR) M-20A, Flour Milling Products. For information regarding the CIR, see Contacts for Data Users at the end of the Census of Manufactures section.

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 2041, Flour and Other Grain Mill Products, had employment of 13.1 thousand. The employment figure was 2 percent below the 13.3 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 Texas, New York, Kansas, and Illinois. This represents a shift from 1987 when Tennessee, Illinois, Texas, and Kansas were the leading States.

The total value of shipments for establishments classified in this industry was \$6.3 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 2041 shipped \$5.9 billion of flour and other grain mill products considered primary to the industry, \$106.4 million of secondary products, and had \$271.2 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 98 percent (specialization ratio). In 1987, the specialization ratio also was 98 percent.

Establishments in this industry also accounted for 96 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 2041, no matter in what industry they were produced, appear in table 6a and aggregate to \$6.2 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 flour and other grain mill products industry amounted to \$4.7 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 5 percent of the total value of shipments.

## INDUSTRY 2043, CEREAL BREAKFAST FOODS

This industry is made up of establishments primarily engaged in manufacturing cereal breakfast foods and related preparations, except breakfast bars. Establishments primarily engaged in manufacturing granola bars and other types of breakfast bars are classified in industry 2064.

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 2043, Cereal Breakfast Foods, had employment of 16.1 thousand. The employment figure was 1 percent above the 16.0 thousand reported in 1987. Compared with 1991, employment increased 3 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, Illinois, Iowa, and California. These same States were the leaders in 1987.

The total value of shipments for establishments classified in this industry was \$9.8 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 2043 shipped \$7.5 billion of cereal breakfast foods considered primary to the industry, \$1.4 billion of secondary products, and had \$846.1 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 84 percent (specialization ratio). In 1987, the specialization ratio was 79 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 98 percent.

The products primary to industry 2043, no matter in what industry they were produced, appear in table 6a and aggregate to \$7.8 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 cereal breakfast foods industry amounted to \$2.5 billion. Data on specific materials consumed appear in table 7.

No establishments in this industry were excluded from the mail portion of the census. However, for a small number of establishments, reports were not received at the time the data were tabulated. For these establishments data 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 2044, RICE MILLING

This industry is made up of establishments primarily engaged in cleaning and polishing rice and in manufacturing rice flour and mill. Other important products of this industry include brown rice, milled rice, (including polished rice), rice polish, and rice bran.

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 2044, Rice Milling, had employment of 3.9 thousand. The employment figure was 13 percent below the 4.5 thousand reported in 1987. Compared with 1991, employment decreased 7 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 Arkansas, California, Louisiana, and Texas, accounting for approximately 84 percent of the industry's employment. This represents a shift from 1987 when Arkansas, California, Texas, Louisiana, and Mississippi accounted for approximately 93 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$1.7 billion.

The products primary to industry 2044, no matter in what industry they were produced, appear in table 6a and aggregate to \$1.6 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 rice milling industry amounted to \$1.2 billion. Data on specific materials consumed appear in table 7.

No establishments in this industry were excluded from the mail portion of the census. However, for a small number of establishments, reports were not received at the time the data were tabulated. For these establishments data were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of the total value of shipments.

## INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS

This industry is made up of establishments primarily engaged in preparing flour mixes or doughs from purchased flour. Establishments primarily engaged in milling flour from grain and producing mixes or doughs are classified in industry 2041.

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 2045, Prepared Flour Mixes and Doughs, had employment of 15.8 thousand. The employment figure was 31 percent above the 12.1 thousand reported in 1987. Compared with 1991, employment increased 31 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 Missouri, Illinois, Tennessee, and California. This represents a shift from 1987 when Illinois, Tennessee, Indiana, and Missouri were the leading States.

The total value of shipments for establishments classified in this industry was \$3.9 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 2045 shipped \$3.3 billion of prepared flour mixes and doughs considered primary to the industry, \$320.0 million of secondary products, and had \$203.3 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 91 percent (specialization ratio). In 1987, the specialization ratio was 89 percent.

Establishments in this industry also accounted for 86 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 78 percent.

The products primary to industry 2045, no matter in what industry they were produced, appear in table 6a and aggregate to \$3.9 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 prepared flour mixes and doughs industry amounted to \$2.0 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 7 percent of the total value of shipments.

## INDUSTRY 2046, WET CORN MILLING

This industry is made up of establishments primarily engaged in milling corn or sorghum grain (milo) by the wet process and producing starch, syrup, oil, sugar, and byproducts, such as gluten feed and meal. Also included in this industry are establishments primarily engaged in manufacturing starch from other vegetable sources (e.g., potatoes, wheat). Establishments primarily engaged in manufacturing table syrups from corn syrup and other ingredients, and those manufacturing starch base dessert powders, are classified in industry 2099.

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 2046, Wet Corn Milling, had employment of 9.2 thousand. The employment figure was 7 percent above the 8.6 thousand reported in 1987. Compared with 1991, employment decreased 5 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 Iowa, Illinois, Indiana, and Tennessee. These same States were the leaders in 1987.

The total value of shipments for establishments classified in this industry was \$7.0 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 2046 shipped \$6.1 billion of wet corn milling considered primary to the industry, \$823.2 million of secondary products, and had \$122.7 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 88 percent (specialization ratio). In 1987, the specialization ratio also was 88 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 94 percent.

The products primary to industry 2046, no matter in what industry they were produced, appear in table 6a and aggregate to \$6.4 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 wet corn milling industry amounted to \$3.7 billion. Data on specific materials consumed appear in table 7.

No establishments in this industry were excluded from the mail portion of the census. However, for a small number of establishments, reports were not received at the time the data were tabulated. For these establishments data 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 2047, DOG AND CAT FOOD

This industry is made up of establishments primarily engaged in manufacturing dog and cat food from cereal, meat, and other ingredients. These preparations may be canned, frozen, or dry. Establishments primarily engaged in manufacturing feed for animals other than dogs and cats are classified in industry 2048.

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 2047, Dog and Cat Food, had employment of 13.8 thousand. The employment figure was 3 percent above the 13.4 thousand reported in 1987. Compared with 1991, employment increased 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 Pennsylvania, California, Kansas, and Missouri, accounting for approximately 38 percent of the industry's employment. This represents a shift from 1987 when Pennsylvania, Iowa, Ohio, and California accounted for approximately 35 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$7.0 billion.

The products primary to industry 2047, no matter in what industry they were produced, appear in table 6a and aggregate to \$6.3 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 dog and cat food industry amounted to \$3.3 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 2 percent of the total value of shipments.

### INDUSTRY 2048, PREPARED FEEDS, N.E.C.

This industry is made up of establishments primarily engaged in manufacturing prepared feeds and feed ingredients and adjuncts for animals and fowls, except dogs and cats. Included in this industry are poultry and livestock feed and feed ingredients, such as alfalfa meal, feed supplements, and feed concentrates and feed premixes. Also included are establishments primarily engaged in slaughtering animals for animal feed. Establishments primarily engaged in slaughtering animals for human consumption are classified in industry group 201. Establishments primarily engaged in manufacturing dog and cat food are classified in industry 2047.

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 2048, Prepared Feeds, N.E.C., had employment of 35.5 thousand. The employment figure was 3 percent above the 34.5 thousand reported in 1987. Compared with 1991, employment decreased 1 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 Iowa, Illinois, Texas, and California, accounting for approximately 30 percent of the industry's employment. These same States were the leaders in 1987 when they accounted for 30 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$14.4 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 2048 shipped \$13.1 billion of prepared feeds, not elsewhere classified, considered primary to the industry, \$260.9 million of secondary products, and had \$999.1 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 98 percent (specialization ratio). In 1987, the specialization ratio also was 98 percent.

Establishments in this industry also accounted for 99 percent of products considered primary to the industry no matter where they were actually produced (coverage ratio). In 1987, the coverage ratio was 96 percent.

The products primary to industry 2048, no matter in what industry they were produced, appear in table 6a and

aggregate to \$13.3 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 prepared feeds, not elsewhere classified, industry amounted to \$11.5 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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>															
1992 Census	230	365	172	13.1	408.9	9.5	21.5	276.8	1 824.5	4 875.3	6 294.4	253.5	570.7	98	98
1991 ASM	(NA)	(NA)	(NA)	12.4	362.0	9.2	20.4	248.5	1 394.4	3 806.2	5 207.1	152.1	432.9	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	12.3	351.0	9.1	19.9	240.3	1 251.3	4 348.0	5 824.7	114.2	388.7	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	12.3	339.6	9.0	20.0	231.7	1 420.3	4 362.6	5 776.5	92.4	484.0	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	12.8	351.0	9.8	21.2	249.5	1 439.4	3 781.4	5 204.9	130.3	509.2	(NA)	(NA)
1987 Census	237	358	185	13.3	354.6	9.9	21.4	246.0	1 336.7	3 657.0	4 984.8	79.5	348.8	98	97
1986 ASM	(NA)	(NA)	(NA)	13.5	348.7	9.9	21.4	241.3	1 345.9	3 642.5	5 003.1	62.8	318.9	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	13.3	331.5	9.8	21.0	230.1	1 159.4	4 039.0	5 204.6	82.7	407.0	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	13.9	335.5	10.3	22.3	234.4	1 208.0	4 108.5	5 305.7	68.7	396.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.7	335.4	10.9	24.2	237.3	1 198.4	4 012.1	5 228.6	64.6	354.9	(NA)	(NA)
1982 Census	251	360	174	15.1	323.0	11.4	24.2	233.3	1 094.3	3 825.5	4 932.8	90.6	381.6	97	94
1981 ASM	(NA)	(NA)	(NA)	15.8	305.7	11.8	28.1	214.8	1 113.7	4 189.1	5 313.8	67.3	382.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.5	273.9	11.3	25.6	195.7	1 030.4	3 819.8	4 835.4	53.3	439.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	15.3	255.5	11.2	25.2	181.3	942.5	3 281.2	4 218.3	68.4	402.0	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	15.1	241.6	11.1	24.4	168.5	845.3	2 934.3	3 760.9	58.9	303.8	(NA)	(NA)
1977 Census	300	407	173	15.6	222.3	11.3	24.6	153.4	824.5	2 854.2	3 683.3	52.4	263.2	98	94
<b>INDUSTRY 2043, CEREAL BREAKFAST FOODS</b>															
1992 Census	42	65	42	16.1	745.3	13.1	29.7	597.6	7 338.1	2 470.9	9 798.6	396.6	365.7	84	96
1991 ASM	(NA)	(NA)	(NA)	15.7	707.1	12.7	27.1	558.9	6 580.7	2 371.5	8 954.4	297.9	325.5	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	16.1	684.0	13.1	29.0	548.4	6 325.3	2 371.4	8 704.6	396.8	351.3	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	16.0	665.1	13.2	30.2	532.0	5 754.1	2 150.4	7 912.3	483.1	360.6	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	16.4	654.6	13.7	30.3	525.5	5 483.8	1 823.3	7 274.4	394.5	340.3	(NA)	(NA)
1987 Census	33	53	34	16.0	598.9	13.1	28.4	478.6	4 904.5	1 869.6	6 585.7	333.4	306.6	79	98
1986 ASM	(NA)	(NA)	(NA)	16.4	585.1	13.3	27.8	464.9	4 513.1	1 881.4	6 187.6	270.1	308.1	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	16.3	563.1	13.3	27.3	447.1	3 994.7	1 721.2	5 718.1	228.3	275.6	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	16.2	525.9	13.2	26.8	415.0	3 478.6	1 636.2	5 107.2	189.3	284.1	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	16.3	483.0	13.3	26.7	376.3	3 089.3	1 502.0	4 571.9	176.7	255.4	(NA)	(NA)
1982 Census	32	52	37	15.6	435.0	12.8	25.5	340.0	2 622.8	1 475.0	4 131.9	185.4	229.2	77	96
1981 ASM	(NA)	(NA)	(NA)	15.8	412.6	13.4	27.6	329.0	2 361.9	1 586.7	3 950.2	126.6	251.9	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.9	375.5	13.7	28.1	302.3	2 108.4	1 401.6	3 476.1	138.2	250.7	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	16.3	347.2	14.1	28.6	280.0	1 859.6	1 281.3	3 095.7	92.0	214.9	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	16.6	305.2	14.0	28.3	240.3	1 598.7	1 084.0	2 874.1	62.5	184.5	(NA)	(NA)
1977 Census	32	48	35	16.4	287.4	13.8	28.8	230.0	1 447.0	1 061.2	2 497.5	78.8	152.1	74	93
<b>INDUSTRY 2044, RICE MILLING</b>															
1992 Census	44	53	33	3.9	94.4	3.1	6.7	65.6	437.0	1 204.4	1 650.7	23.5	318.6	(D)	(D)
1991 ASM	(NA)	(NA)	(NA)	4.2	96.8	3.4	7.5	66.0	450.9	1 287.9	1 739.2	25.2	296.1	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	4.3	95.7	3.5	7.7	65.0	592.5	1 180.7	1 771.7	23.2	293.4	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	4.7	97.1	3.7	7.9	66.3	553.4	1 203.0	1 743.0	27.0	301.4	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	4.5	97.9	3.5	7.7	65.0	398.4	1 183.6	1 603.4	38.4	316.4	(NA)	(NA)
1987 Census	48	63	35	4.5	89.1	3.5	7.3	60.4	469.6	1 819.4	1 234.9	48.8	395.5	98	95
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>															
1992 Census	158	209	122	15.8	429.2	11.8	24.4	276.1	1 821.7	2 040.3	3 885.7	160.6	227.2	91	86
1991 ASM	(NA)	(NA)	(NA)	12.1	337.1	8.4	17.3	203.7	1 691.7	1 628.3	3 302.0	103.6	202.2	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	12.0	313.3	8.4	17.6	197.0	1 496.7	1 869.3	3 155.5	108.3	180.0	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	12.4	311.2	8.4	17.7	187.8	1 287.6	1 840.1	2 812.0	101.1	185.5	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	12.4	290.2	8.4	17.2	188.6	1 400.5	1 418.4	2 802.9	87.3	174.5	(NA)	(NA)
1987 Census	120	149	97	12.1	275.9	8.2	16.5	156.8	1 278.8	1 339.6	2 825.1	66.1	152.6	89	78
<b>INDUSTRY 2046, WET CORN MILLING</b>															
1992 Census	28	51	34	9.2	371.3	6.1	14.7	233.8	3 257.5	3 742.3	7 045.2	409.2	337.8	88	95
1991 ASM	(NA)	(NA)	(NA)	9.7	386.6	6.2	14.5	217.2	3 285.9	3 887.5	7 114.1	369.5	385.2	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	9.3	355.6	6.0	13.7	205.7	2 867.7	3 880.1	6 698.4	290.4	385.4	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	9.3	359.4	6.0	13.5	193.7	2 554.7	3 745.8	6 287.9	283.9	305.5	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	9.2	351.1	6.0	13.3	194.4	2 120.2	3 230.7	5 312.5	383.2	305.2	(NA)	(NA)
1987 Census	31	60	35	8.6	298.9	5.9	12.9	192.8	2 074.5	2 694.4	4 788.9	281.9	244.2	88	94
1986 ASM	(NA)	(NA)	(NA)	8.3	263.2	5.6	12.2	167.6	1 472.8	2 778.7	4 273.5	340.5	231.3	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	8.7	286.5	6.1	13.0	177.5	1 363.4	2 828.4	4 189.7	450.9	262.2	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	8.4	247.9	5.9	12.5	167.2	1 020.3	2 803.4	3 814.8	179.3	243.5	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	8.9	254.0	6.3	13.5	171.2	1 224.1	2 279.9	3 501.2	131.3	253.3	(NA)	(NA)
1982 Census	25	42	27	9.5	254.7	6.7	13.8	170.6	1 157.4	2 101.0	3 268.4	326.2	243.4	89	92
1981 ASM	(NA)	(NA)	(NA)	10.4	266.6	7.4	14.8	185.2	1 428.7	2 403.7	3 836.0	469.7	228.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	10.7	242.7	7.8	14.9	168.7	1 240.6	2 018.5	3 239.1	183.1	247.0	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	10.8	216.1	7.5	14.9	152.7	847.5	1 815.5	2 442.4	140.0	208.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	11.1	196.9	8.1	15.9	142.8	690.0	1 443.9	2 122.5	205.3	185.9	(NA)	(NA)
1977 Census	22	39	27	10.9	191.1	7.8	15.7	132.2	666.7	1 338.0	2 014.8	232.2	158.4	94	93
<b>INDUSTRY 2047, DOG AND CAT FOOD</b>															
1992 Census	102	161	105	13.8	455.8	10.5	22.4	301.5	3 729.9	3 295.5	7 023.9	179.8	347.8	(D)	(D)
1991 ASM	(NA)	(NA)	(NA)	12.8	405.0	9.8	20.6	271.4	3 619.8	3 467.3	7 097.4	167.7	336.0	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	12.9	395.4	9.5	20.0	262.3	3 842.2	3 210.5	7 015.0	167.9	371.2	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	13.2	395.1	9.8	20.1	263.6	3 577.6	3 149.2	6 703.3	144.2	327.8	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	13.7	384.6	10.1	20.8	254.4	3 088.4	2 911.0	5 956.3	143.9	299.3	(NA)	(NA)
1987 Census	130	186	101	13.4	365.8	9.9	20.5	244.2	2 741.5	2 296.8	5 069.3	106.2	234.9	99	97
<b>INDUSTRY 2048, PREPARED FEEDS, N.E.C.</b>															
1992 Census	1 160	1 714	569	35.5	875.0	19.7	41.5	417.1	2 875.6	11 487.7	14 373.9	183.6	723.9	98	99
1991 ASM	(NA)	(NA)	(NA)	35.8	831.0	21.1	44.3	420.2	2 831.0	10 872.4	13 696.5	181.7	685.0	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	35.8	806.0	20.7	44.1	395.5	2 919.0	10 862.5	13 570.2	215.7	705.8	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	34.9	766.6	19.7	42.0	378.2	2 762.3	10 801.2	13 538.8	228.5	675.8	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	33.4	710.2	19.3	40.3	343.4	2 806.8	10 048.5	12 790.6	139.7	685.1	(NA)	(NA)
1987 Census	1 182	1 738	545	34.5	720.4	19.5	40.8	349.0	2 603.0	8 871.0	11 488.2	153.7	595.5	98	96

See footnotes at end of table.

**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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>															
1992 Census	230	365	172	13.1	408.9	9.5	21.5	276.8	1 624.5	4 675.3	6 294.4	253.5	570.7	98	98
1991 ASM	(NA)	(NA)	(NA)	12.4	362.0	9.2	20.4	248.5	1 394.4	3 806.2	5 207.1	152.1	432.9	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	12.3	351.0	9.1	19.9	240.3	1 251.3	4 348.0	5 624.7	114.2	386.7	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	12.3	339.8	9.0	20.0	231.7	1 420.3	4 362.6	5 776.5	92.4	484.0	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	12.8	351.0	9.6	21.2	249.5	1 439.4	3 791.4	5 204.9	130.3	509.2	(NA)	(NA)
1987 Census	237	358	165	13.3	354.6	9.9	21.4	246.0	1 336.7	3 657.0	4 984.8	79.5	348.8	98	97
1986 ASM	(NA)	(NA)	(NA)	13.5	348.7	9.9	21.4	241.3	1 345.9	3 642.5	5 003.1	62.8	318.9	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	13.3	331.5	9.8	21.0	230.1	1 159.4	4 039.0	5 204.6	82.7	407.0	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	13.9	335.5	10.3	22.3	234.4	1 208.0	4 108.5	5 305.7	68.7	398.2	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.7	335.4	10.9	24.2	237.3	1 198.4	4 012.1	5 228.6	84.6	354.9	(NA)	(NA)
1982 Census	251	360	174	15.1	323.0	11.4	24.2	233.3	1 094.3	3 825.5	4 932.8	90.6	361.6	97	94
1981 ASM	(NA)	(NA)	(NA)	15.8	305.7	11.6	26.1	214.6	1 113.7	4 189.1	5 313.8	67.3	382.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.5	273.9	11.3	25.8	195.7	1 030.4	3 819.8	4 835.4	53.3	439.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	15.3	255.5	11.2	25.2	181.3	942.5	3 281.2	4 218.3	68.4	402.0	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	15.1	241.6	11.1	24.4	169.5	845.3	2 934.3	3 760.9	58.9	303.8	(NA)	(NA)
1977 Census	300	407	173	15.6	222.3	11.3	24.6	153.4	824.5	2 854.2	3 683.3	52.4	263.2	98	94
<b>INDUSTRY 2043, CEREAL BREAKFAST FOODS</b>															
1992 Census	42	65	42	16.1	745.3	13.1	29.7	597.6	7 338.1	2 470.9	9 798.6	396.6	365.7	84	96
1991 ASM	(NA)	(NA)	(NA)	15.7	707.1	12.7	27.1	558.9	6 560.7	2 371.5	8 954.4	297.9	325.5	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	16.1	684.0	13.1	29.0	546.4	6 325.3	2 371.4	8 704.6	396.8	351.3	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	16.0	665.1	13.2	30.2	532.0	5 754.1	2 150.4	7 912.3	483.1	360.6	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	16.4	654.6	13.7	30.3	525.5	5 463.8	1 823.3	7 274.4	394.5	340.3	(NA)	(NA)
1987 Census	33	53	34	16.0	598.9	13.1	28.4	478.6	4 904.5	1 669.8	6 585.7	333.4	306.6	79	98
1986 ASM	(NA)	(NA)	(NA)	16.4	585.1	13.3	27.8	464.9	4 513.1	1 681.4	6 167.6	270.1	308.1	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	16.3	563.1	13.3	27.3	447.1	3 994.7	1 721.2	5 718.1	228.3	275.6	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	16.2	525.9	13.2	26.8	415.0	3 478.6	1 636.2	5 107.2	189.3	264.1	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	16.3	483.0	13.3	26.7	376.3	3 069.3	1 502.0	4 571.9	176.7	255.4	(NA)	(NA)
1982 Census	32	52	37	15.6	435.0	12.8	25.5	340.0	2 622.8	1 475.0	4 131.9	165.4	229.2	77	96
1981 ASM	(NA)	(NA)	(NA)	15.8	412.6	13.4	27.6	328.0	2 361.9	1 586.7	3 950.2	126.6	251.9	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	15.9	375.5	13.7	28.1	302.3	2 106.4	1 401.6	3 476.1	138.2	250.7	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	16.3	347.2	14.1	28.6	280.0	1 859.6	1 281.3	3 095.7	92.0	214.9	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	16.6	305.2	14.0	28.3	240.3	1 598.7	1 084.0	2 674.1	62.5	164.5	(NA)	(NA)
1977 Census	32	48	35	16.4	287.4	13.8	28.8	230.0	1 447.0	1 061.2	2 497.5	79.8	152.1	74	93
<b>INDUSTRY 2044, RICE MILLING</b>															
1992 Census	44	53	33	3.9	84.4	3.1	6.7	65.8	437.0	1 204.4	1 650.7	23.5	316.6	(D)	(D)
1991 ASM	(NA)	(NA)	(NA)	4.2	96.8	3.4	7.5	66.0	450.9	1 287.9	1 739.2	25.2	296.1	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	4.3	95.7	3.5	7.7	65.0	592.5	1 180.7	1 771.7	23.2	293.4	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	4.7	97.1	3.7	7.9	66.3	553.4	1 203.0	1 743.0	27.0	301.4	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	4.5	87.9	3.5	7.7	65.0	398.4	1 183.6	1 603.4	38.4	316.4	(NA)	(NA)
1987 Census	48	63	35	4.5	89.1	3.5	7.3	60.4	469.6	1 234.9	1 661.4	48.8	395.5	96	95
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>															
1992 Census	156	209	122	15.8	429.2	11.8	24.4	276.1	1 821.7	2 040.3	3 885.7	180.6	227.2	91	86
1991 ASM	(NA)	(NA)	(NA)	12.1	337.1	8.4	17.3	203.7	1 691.7	1 628.3	3 302.0	103.6	202.2	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	12.0	313.3	8.4	17.6	197.0	1 496.7	1 669.3	3 155.5	108.3	180.0	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	12.4	311.2	8.4	17.7	187.8	1 267.6	1 640.1	2 912.0	101.1	185.5	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	12.4	290.2	8.4	17.2	188.8	1 400.5	1 418.4	2 802.9	67.3	174.5	(NA)	(NA)
1987 Census	120	149	97	12.1	275.9	8.2	16.5	156.8	1 276.8	1 339.6	2 625.1	66.1	152.6	89	78
<b>INDUSTRY 2046, WET CORN MILLING</b>															
1992 Census	28	51	34	9.2	371.3	6.1	14.7	233.8	3 257.5	3 742.3	7 045.2	409.2	337.8	88	95
1991 ASM	(NA)	(NA)	(NA)	9.7	386.6	6.2	14.5	217.2	3 265.9	3 867.5	7 114.1	389.5	385.2	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	9.3	355.6	6.0	13.7	205.7	2 867.7	3 861.1	6 698.4	290.4	365.4	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	9.3	359.4	6.0	13.5	193.7	2 554.7	3 745.8	6 287.9	283.9	305.5	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	9.2	351.1	6.0	13.3	194.4	2 120.2	3 230.7	5 312.5	283.2	305.2	(NA)	(NA)
1987 Census	31	60	35	8.6	288.9	5.9	12.9	192.8	2 074.5	2 694.4	4 788.9	281.9	244.2	88	94
1986 ASM	(NA)	(NA)	(NA)	8.3	263.2	5.6	12.2	167.6	1 472.8	2 778.7	4 273.5	340.5	231.3	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	8.7	266.5	6.1	13.0	177.5	1 363.4	2 826.4	4 189.7	450.9	262.2	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	8.4	247.9	5.9	12.5	167.2	1 020.3	2 803.4	3 814.8	179.3	243.5	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	8.9	254.0	6.3	13.5	171.2	1 224.1	2 279.9	3 501.2	131.3	253.3	(NA)	(NA)
1982 Census	25	42	27	9.5	254.7	6.7	13.8	170.6	1 157.4	2 101.0	3 268.4	326.2	243.4	89	92
1981 ASM	(NA)	(NA)	(NA)	10.4	266.6	7.4	14.8	185.2	1 428.7	2 403.7	3 836.0	469.7	229.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	10.7	242.7	7.6	14.9	166.7	1 240.8	2 018.5	3 239.1	183.1	247.0	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	10.8	216.1	7.5	14.9	152.7	847.5	1 615.5	2 442.4	140.0	208.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	11.1	196.9	8.1	15.9	142.8	690.0	1 443.9	2 122.5	205.3	185.9	(NA)	(NA)
1977 Census	22	39	27	10.9	191.1	7.8	15.7	132.2	666.7	1 338.0	2 014.8	232.2	158.4	84	93
<b>INDUSTRY 2047, DOG AND CAT FOOD</b>															
1992 Census	102	161	105	13.8	455.6	10.5	22.4	301.5	3 726.9	3 295.5	7 023.9	178.8	347.9	(D)	(D)
1991 ASM	(NA)	(NA)	(NA)	12.8	405.0	9.8	20.6	271.4	3 619.8	3 487.3	7 097.4	187.7	336.0	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	12.9	395.4	9.5	20.0	262.3	3 842.2	3 210.5	7 015.0	187.9	371.2	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	13.2	395.1	9.8	20.1	263.6	3 577.8	3 149.2	6 703.3	144.2	327.8	(NA)	(NA)
1988 ASM	(NA)	(NA)	(NA)	13.7	384.6	10.1	20.8	254.4	3 088.4	2 911.0	5 958.3	143.9	299.3	(NA)	(NA)
1987 Census	130	166	101	13.4	365.8	9.9	20.5	244.2	2 741.5	2 296.8	5 069.3	108.2	234.9	89	97
<b>INDUSTRY 2048, PREPARED FEEDS, N.E.C.</b>															
1992 Census	1 160	1 714	569	35.5	875.0	19.7	41.5	417.1	2 875.6	11 487.7	14 373.9	183.6	723.9	98	99
1991 ASM	(NA)	(NA)	(NA)	35.8	831.0	21.1	44.3	420.2	2 831.0	10 872.4	13 696.5	161.7	685.0	(NA)	(NA)
1990 ASM	(NA)	(NA)	(NA)	35.8	808.0	20.7	44.1	395.5	2 919.0	10 862.5	13 570.2	215.7	705.8	(NA)	(NA)
1989 ASM	(NA)	(NA)	(NA)	34.9	786.6	19.7	42.0	378.2	2						

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

<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.

**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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>									
1992 Census	31 214	73	2 283	12.87	74	81	124 008	25	75.56
1991 ASM	29 194	74	2 217	12.18	73	80	112 452	26	68.35
1990 ASM	28 537	74	2 187	12.08	77	84	101 732	28	62.88
1989 ASM	27 810	73	2 222	11.59	76	81	115 472	24	71.01
1988 ASM	27 422	75	2 208	11.77	73	79	112 453	24	67.90
1987 Census	26 662	74	2 162	11.50	73	80	100 504	27	62.46
1986 ASM	25 830	73	2 162	11.28	73	80	99 696	26	62.89
1985 ASM	24 925	74	2 143	10.86	78	84	87 173	29	55.21
1984 ASM	24 137	74	2 185	10.51	77	84	86 908	28	54.17
1983 ASM	22 816	74	2 220	9.81	77	83	81 524	28	49.52
1982 Census	21 391	75	2 123	9.64	78	84	72 470	30	45.22
1981 ASM	19 348	73	2 250	8.22	79	85	70 487	27	42.67
1980 ASM	17 671	73	2 285	7.64	79	85	66 477	27	40.25
1979 ASM	16 699	73	2 250	7.19	78	84	61 601	27	37.40
1978 ASM	16 000	74	2 198	6.91	78	84	55 980	29	34.64
1977 Census	14 250	72	2 177	6.24	77	84	52 853	27	33.52
<b>INDUSTRY 2043, CEREAL BREAKFAST FOODS</b>									
1992 Census	46 292	81	2 267	20.12	25	33	455 783	10	247.07
1991 ASM	45 038	81	2 134	20.62	28	34	419 153	11	242.83
1990 ASM	42 484	81	2 214	18.84	27	35	392 876	11	218.11
1989 ASM	41 569	83	2 288	17.62	27	36	359 631	12	190.53
1988 ASM	39 915	84	2 212	17.34	25	34	333 159	12	180.32
1987 Census	37 431	82	2 168	16.85	25	35	306 531	12	172.69
1986 ASM	35 877	81	2 090	16.72	27	37	275 189	13	162.34
1985 ASM	34 546	82	2 053	16.38	30	40	245 074	14	146.33
1984 ASM	32 483	81	2 030	15.49	32	42	214 728	15	129.80
1983 ASM	29 632	82	2 008	14.09	33	43	188 301	16	114.96
1982 Census	27 885	82	1 992	13.33	36	46	168 128	17	102.85
1981 ASM	26 449	86	2 060	11.92	40	51	151 404	17	85.58
1980 ASM	23 616	86	2 051	10.76	40	51	132 604	18	75.03
1979 ASM	21 301	87	2 028	9.79	41	52	114 086	19	65.02
1978 ASM	18 386	84	2 021	8.49	41	52	96 307	19	56.49
1977 Census	17 524	84	2 087	7.99	42	54	88 232	20	50.24
<b>INDUSTRY 2044, RICE MILLING</b>									
1992 Census	24 205	79	2 161	9.79	73	79	112 051	22	65.22
1991 ASM	23 048	81	2 206	8.80	73	78	107 357	21	60.12
1990 ASM	22 256	81	2 200	8.44	67	72	137 791	16	76.95
1989 ASM	20 690	79	2 135	8.39	69	75	117 745	18	70.05
1988 ASM	21 756	78	2 200	8.44	73	79	88 533	25	51.74
1987 Census	19 800	78	2 086	8.27	66	74	104 356	19	64.33
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>									
1992 Census	27 185	75	2 088	11.32	53	64	115 297	24	74.66
1991 ASM	27 680	69	2 080	11.77	49	60	139 810	20	97.79
1990 ASM	26 108	70	2 085	11.19	53	63	124 725	21	85.04
1989 ASM	25 097	68	2 107	10.81	56	67	103 839	24	72.75
1988 ASM	23 403	68	2 048	9.80	51	61	112 944	21	61.42
1987 Census	22 802	68	2 012	9.50	51	62	105 686	22	77.50
<b>INDUSTRY 2046, WET CORN MILLING</b>									
1992 Census	40 359	66	2 410	15.80	53	58	354 076	11	221.60
1991 ASM	39 856	64	2 339	14.98	54	60	336 691	12	225.23
1990 ASM	38 237	65	2 283	15.01	58	63	308 355	12	209.32
1989 ASM	38 645	65	2 250	14.35	60	65	274 699	14	189.24
1988 ASM	38 163	65	2 217	14.62	61	67	230 457	17	159.41
1987 Census	34 756	69	2 186	14.95	56	63	241 221	14	160.81
1986 ASM	31 711	67	2 179	13.74	65	71	177 446	18	120.72
1985 ASM	30 632	70	2 131	13.65	67	74	156 713	20	104.88
1984 ASM	29 512	70	2 119	13.38	73	80	121 484	24	81.62
1983 ASM	28 539	71	2 143	12.68	65	72	127 539	21	90.67
1982 Census	26 811	71	2 060	12.36	64	72	121 832	22	83.87
1981 ASM	25 635	71	2 000	12.51	63	70	137 375	19	96.53
1980 ASM	22 682	71	1 961	11.19	62	70	115 944	20	83.28
1979 ASM	20 009	69	1 987	10.25	66	75	78 472	25	56.88
1978 ASM	17 739	73	1 963	8.98	68	77	62 162	29	43.40
1977 Census	17 532	72	2 013	8.42	66	76	61 165	29	42.46

20D-10 GRAIN MILL PRODUCTS

MANUFACTURES—INDUSTRY SERIES

**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 2047, DOG AND CAT FOOD</b>									
1992 Census	33 014	76	2 133	13.46	47	53	270 283	12	166.51
1991 ASM	31 641	75	2 146	13.17	49	55	282 797	11	175.72
1990 ASM	30 651	74	2 105	13.12	46	51	297 845	10	192.11
1989 ASM	29 832	74	2 051	13.11	47	53	271 030	11	177.99
1988 ASM	28 073	74	2 059	12.23	49	55	225 431	12	148.48
1987 Census	27 299	74	2 071	11.91	45	53	204 590	13	133.73
<b>INDUSTRY 2048, PREPARED FEEDS, N.E.C.</b>									
1992 Census	24 648	55	2 107	10.05	80	86	81 003	30	69.29
1991 ASM	23 212	59	2 100	9.49	79	85	79 078	29	63.91
1990 ASM	22 514	58	2 130	8.87	79	85	81 536	28	66.19
1989 ASM	21 968	56	2 132	9.00	80	85	79 149	28	65.77
1988 ASM	21 263	58	2 088	8.52	79	84	84 036	25	69.65
1987 Census	20 881	57	2 092	8.55	77	84	75 449	28	63.80

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		
	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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>													
United States	365	172	13.1	408.9	9.5	21.5	276.8	1 624.5	4 675.3	6 294.4	253.5	13.3	1 336.7
California	29	10	.6	22.5	.4	1.0	14.7	99.9	290.0	390.6	51.7	F	(NA)
Colorado	6	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Florida	5	3	.1	3.7	.1	.2	3.1	22.2	88.8	110.9	.4	(NA)	(NA)
Georgia	8	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	C	(D)
Hawaii	1	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	14	10	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	9.8	1.0	70.8
Indiana	14	8	.4	11.9	.3	.6	7.3	42.6	144.2	187.2	2.1	.4	30.5
Iowa	9	5	.6	21.5	.4	.9	12.7	76.5	136.1	213.8	5.0	.2	16.2
Kansas	22	17	.9	25.1	.7	1.6	18.0	109.8	370.3	477.7	5.6	1.0	107.1
Kentucky	5	4	.1	3.3	.1	.2	2.0	8.9	15.8	25.3	(D)	(NA)	(NA)
Maryland	3	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Michigan	11	7	.7	23.6	.5	1.0	15.3	69.4	134.0	203.3	3.0	.6	67.1
Minnesota	18	12	.7	25.5	.6	1.4	20.2	88.3	378.7	465.2	5.3	.8	67.8
Missouri	13	9	.7	21.2	.5	1.0	15.7	144.2	286.3	432.3	7.5	.6	74.1
Montana	3	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nebraska	6	5	.4	13.4	.3	.7	10.8	50.2	148.5	197.8	(D)	E	(D)
New York	20	10	.9	34.2	.7	1.7	28.8	123.3	451.0	574.0	3.0	.6	70.3
North Carolina	23	8	.8	13.5	.4	.9	8.1	33.0	145.2	178.8	2.4	F	(D)
North Dakota	2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Ohio	11	8	.4	15.0	.3	.6	9.1	45.6	191.2	235.9	2.8	.4	27.6
Oklahoma	5	5	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Oregon	3	3	.1	4.7	.1	.2	2.8	15.1	92.8	108.2	(D)	.2	32.7
Pennsylvania	26	3	.2	6.2	.2	.4	4.5	23.2	113.7	136.7	1.7	.3	22.4
Tennessee	9	5	.5	15.9	.4	1.0	10.2	129.9	214.2	343.4	2.8	1.4	234.4
Texas	18	11	1.6	41.1	1.2	2.4	23.5	137.8	294.5	428.7	22.6	1.1	101.5
Utah	9	5	.3	8.7	.2	.4	5.4	24.6	83.7	109.0	.6	.3	30.7
Virginia	12	2	.1	3.3	.1	.2	2.0	21.6	49.7	71.2	(D)	(NA)	(NA)
Washington	10	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(D)
Wisconsin	8	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	(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	
	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 2043, CEREAL BREAKFAST FOODS</b>													
United States	65	42	16.1	745.3	13.1	29.7	597.6	7 338.1	2 470.9	9 798.6	396.6	16.0	4 904.5
California	11	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	582.9
Georgia	1	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(NA)	(NA)
Illinois	4	4	1.9	88.1	1.5	3.4	67.1	927.6	258.3	1 182.0	0.0	2.0	654.4
Iowa	3	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Massachusetts	2	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Michigan	3	3	3.9	201.6	3.3	8.1	166.5	1 773.1	529.3	2 301.7	0.0	3.8	1 074.9
Minnesota	7	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missouri	1	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nebraska	3	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New York	4	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Ohio	4	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pennsylvania	4	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>INDUSTRY 2044, RICE MILLING</b>													
United States	53	33	3.9	94.4	3.1	6.7	65.6	437.0	1 204.4	1 650.7	23.5	4.5	469.6
Arkansas	15	9	1.5	31.8	1.3	2.9	23.9	115.4	490.7	599.7	9.8	1.3	58.7
California	11	8	0.7	19.7	0.5	1.1	14.2	95.7	192.8	283.4	0.0	0.0	0.0
Louisiana	8	8	0.8	13.0	0.5	1.0	9.0	71.0	171.9	241.4	2.3	0.0	43.8
Mississippi	3	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	8	6	0.8	16.4	0.4	0.9	10.1	71.6	232.5	307.7	0.0	1.1	97.3
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>													
United States	209	122	15.8	429.2	11.8	24.4	276.1	1 821.7	2 040.3	3 865.7	160.6	12.1	1 278.8
Arkansas	4	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
California	23	10	1.0	28.7	0.7	1.3	17.7	103.9	73.0	177.0	11.1	0.0	0.0
Georgia	7	5	0.9	22.6	0.6	1.2	13.1	82.2	67.5	169.4	4.5	0.0	0.0
Illinois	19	11	2.0	51.6	1.5	3.5	34.6	251.9	307.8	558.5	28.4	1.9	230.6
Indiana	5	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kansas	6	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kentucky	5	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maryland	5	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Massachusetts	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Michigan	8	4	0.4	13.8	0.3	0.6	6.6	51.0	47.9	88.3	1.8	0.0	0.0
Minnesota	8	4	0.4	10.2	0.2	0.5	4.8	15.4	24.7	39.2	3.0	0.0	0.0
Mississippi	3	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missouri	6	5	0.4	12.7	0.2	0.4	3.7	35.3	44.4	79.7	0.0	0.0	0.0
New Jersey	6	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New York	15	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Carolina	4	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ohio	11	8	0.7	14.4	0.5	0.9	10.2	110.5	117.4	227.8	7.8	0.0	43.7
Oregon	8	5	0.0	8.0	0.3	0.6	5.1	26.1	43.5	69.7	1.0	0.0	8.9
Pennsylvania	7	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Carolina	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee	6	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	10	8	0.7	23.0	0.5	1.1	15.6	192.8	105.5	299.8	0.0	0.0	121.3
Utah	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	7	6	0.0	21.6	0.4	0.6	6.7	64.7	123.7	186.6	0.0	0.0	44.5
Wisconsin	5	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.1
<b>INDUSTRY 2046, WET CORN MILLING</b>													
United States	51	34	9.2	371.3	6.1	14.7	233.8	3 257.5	3 742.3	7 045.2	409.2	8.6	2 074.5
Alabama	2	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Colorado	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illinois	6	4	2.0	81.5	1.5	3.3	58.8	810.3	1 100.6	1 932.1	99.0	2.0	558.0
Indiana	4	4	1.7	71.2	1.1	2.8	42.8	497.6	323.4	834.7	47.8	1.6	285.7
Iowa	8	8	3.0	122.3	1.8	4.1	73.8	1 078.0	1 318.6	2 399.9	140.8	2.4	753.5
Kansas	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maine	2	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minnesota	4	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missouri	1	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Carolina	1	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ohio	3	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee	3	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	3	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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	
	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 2047, DOG AND CAT FOOD</b>													
United States	161	105	13.8	455.6	10.5	22.4	301.5	3 729.9	3 295.5	7 023.9	179.8	13.4	2 741.5
Alabama	4	4	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
California	15	9	1.3	47.8	1.1	2.3	32.2	281.3	235.8	512.5	8.1	(D)	(D)
Colorado	2	2	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Georgia	3	1	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Illinois	4	2	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.0	167.4
Indiana	4	3	F	5.7	.1	.3	3.1	20.2	25.8	45.8	(D)	(D)	(D)
Iowa	5	4	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Kansas	10	7	1.3	48.8	.7	1.5	23.6	350.1	194.9	548.8	(D)	(D)	(D)
Michigan	6	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Minnesota	8	5	3	7.5	.3	.6	6.1	51.7	40.9	93.0	1.2	(D)	37.8
Mississippi	3	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Missouri	11	7	1.0	29.6	.8	1.6	20.3	314.5	200.1	514.8	(D)	(D)	148.9
Nebraska	3	3	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
New Jersey	2	1	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
New York	6	4	8	30.6	.6	1.3	21.9	408.8	278.5	684.9	14.4	(D)	231.7
North Carolina	4	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Ohio	10	8	.9	33.3	.7	1.6	24.3	288.0	250.4	517.6	9.9	1.1	237.3
Oklahoma	2	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	C	(D)
Pennsylvania	8	6	1.6	58.1	1.1	2.3	30.8	210.3	242.4	450.6	13.6	1.6	245.5
Tennessee	4	3	.2	4.1	.1	.2	2.6	24.5	33.8	58.3	(D)	.2	28.6
Texas	11	8	F	(D)	(D)	(D)	(D)	(D)	(D)	(D)	5.5	(D)	(D)
Utah	3	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Virginia	4	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.9	(NA)	(NA)
Wisconsin	8	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
<b>INDUSTRY 2048, PREPARED FEEDS, N.E.C.</b>													
United States	E1 1 714	569	35.5	875.0	19.7	41.5	417.1	2 875.6	11 487.7	14 373.9	183.6	34.5	2 603.0
Alabama	46	20	1.0	20.4	.7	1.3	12.2	55.6	620.1	675.9	3.7	1.0	48.7
Arizona	11	4	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.9	C	(D)
Arkansas	56	23	1.2	28.1	.8	1.7	16.7	62.2	862.7	925.7	4.4	1.0	85.1
California	E1 110	33	2.2	65.4	1.3	2.9	31.8	183.0	984.2	1 181.8	7.5	2.4	169.1
Colorado	E1 34	6	.4	9.7	.2	.5	4.5	29.5	100.8	130.3	1.4	.5	33.5
Connecticut	E4 6	3	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Delaware	5	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Florida	35	7	.5	11.7	.3	.6	5.2	44.4	168.3	212.4	5.9	.7	35.3
Georgia	E1 59	24	1.4	35.5	.8	1.8	17.4	91.6	768.1	858.1	5.4	1.5	141.4
Hawaii	3	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Idaho	E1 11	3	.2	5.3	.1	.2	2.5	13.6	21.1	35.1	(D)	E	(D)
Illinois	83	28	2.7	73.5	1.2	2.6	29.8	178.2	585.1	737.4	8.7	2.5	203.0
Indiana	47	20	1.0	27.0	.5	1.1	12.7	120.5	300.8	420.9	4.9	.8	110.7
Iowa	117	48	3.1	78.2	1.3	2.5	28.5	280.4	753.0	1 012.4	17.1	3.1	234.7
Kansas	57	18	1.0	23.1	.7	1.5	14.5	65.4	265.5	333.1	4.8	1.0	64.2
Kentucky	27	9	.4	9.9	.3	.5	5.5	32.6	91.7	124.0	(D)	E	(D)
Louisiana	22	7	.3	5.0	.2	.4	3.1	21.4	87.4	110.9	(D)	E	(D)
Maryland	12	5	.3	7.0	.2	.5	4.7	16.7	211.8	228.4	.3	C	(D)
Massachusetts	6	3	.1	2.5	.1	.1	1.3	5.5	18.9	24.0	(D)	(NA)	(NA)
Michigan	26	5	.3	7.0	.2	.4	3.5	30.4	83.3	111.8	1.6	C	(D)
Minnesota	68	20	1.1	30.5	.6	1.3	14.8	115.3	284.2	399.8	7.4	1.1	75.0
Mississippi	29	10	.4	7.3	.4	.8	5.5	33.2	151.9	185.5	6.1	.4	22.3
Missouri	58	21	1.3	29.5	.8	1.5	14.2	114.9	400.5	516.6	4.2	1.2	95.1
Montana	18	2	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	C	(D)
Nebraska	79	24	1.3	31.1	.7	1.6	15.4	125.5	251.0	378.0	4.3	1.5	172.3
New Jersey	8	3	.2	6.0	.1	.3	3.4	15.5	23.9	39.3	1.2	C	(D)
New York	49	18	.8	22.9	.5	.9	9.7	68.5	218.8	286.6	(D)	.8	55.1
North Carolina	72	22	1.3	30.2	.7	1.5	14.6	131.4	682.4	813.0	10.0	1.5	117.4
North Dakota	14	3	C	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Ohio	51	16	1.1	26.9	.7	1.5	13.9	88.6	250.9	338.8	5.5	.8	42.7
Oklahoma	38	12	.9	18.8	.5	1.0	8.7	84.6	229.2	313.6	4.3	.7	33.4
Oregon	20	8	.4	12.4	.2	.5	5.9	35.5	116.4	152.2	1.4	.4	26.1
Pennsylvania	89	19	1.6	43.9	.7	1.4	13.8	122.9	478.8	598.1	8.3	1.5	118.6
South Carolina	14	4	.3	3.9	.1	.2	2.3	8.6	78.2	87.0	(D)	.3	10.2
South Dakota	17	4	E	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	E	(D)
Tennessee	26	9	.6	14.0	.4	.8	8.2	25.3	199.9	223.3	2.8	.7	37.7
Texas	102	48	2.7	60.3	1.8	3.7	31.5	201.2	777.1	978.1	13.8	2.5	138.5
Utah	17	8	.3	6.3	.2	.3	3.2	22.8	59.2	82.4	.5	.3	26.0
Vermont	6	4	.3	8.8	.2	.3	3.7	23.3	71.7	95.0	(D)	(D)	(D)
Virginia	30	8	.8	14.0	.3	.7	7.6	41.4	191.8	232.4	6.8	E	(D)
Washington	33	16	.8	15.7	.3	.9	7.7	41.7	181.1	203.7	2.1	.6	46.3
Wisconsin	E1 85	21	1.6	41.0	.9	1.8	18.0	150.7	306.5	457.4	4.7	1.3	100.3

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	Flour and other grain mill products (SIC 2041)	Cereal breakfast foods (SIC 2043)	Rice milling (SIC 2044)	Prepared flour mixes and doughs (SIC 2045)	Wet corn milling (SIC 2046)	Dog and cat food (SIC 2047)	Prepared feeds, n.e.c. (SIC 2048)
Companies.....number.....	230	42	44	156	28	102	1 160
All establishments.....number.....	365	65	53	209	51	161	1 714
With 1 to 19 employees.....number.....	193	23	20	87	17	56	1 145
With 20 to 99 employees.....number.....	138	15	22	73	8	64	533
With 100 employees or more.....number.....	34	27	11	49	26	41	38
Employment and labor costs:							
Employees.....1,000.....	13.1	16.1	3.9	15.8	9.2	13.8	35.5
Compensation, total.....mil dol.....	518.9	954.9	122.2	534.6	464.1	577.6	1 072.9
Annual payroll.....mil dol.....	408.9	745.3	94.4	429.2	371.3	455.6	875.0
Fringe benefits.....mil dol.....	108.0	209.6	27.8	105.4	92.8	121.9	197.9
Social Security and other legally required payments.....mil dol.....	49.7	91.1	12.2	43.3	39.0	43.6	95.0
Employer voluntary payments.....mil dol.....	58.3	118.5	15.6	62.1	53.8	78.4	102.9
Production workers:							
Average for year.....1,000.....	9.5	13.1	3.1	11.8	6.1	10.5	19.7
March.....1,000.....	9.8	12.5	3.0	11.7	6.1	10.5	19.9
May.....1,000.....	9.4	13.2	3.1	11.9	6.2	10.5	19.8
August.....1,000.....	9.5	13.6	3.1	11.9	6.2	10.5	19.9
November.....1,000.....	9.3	13.2	3.1	11.8	6.1	10.4	19.4
Hours.....millions.....	21.5	29.7	6.7	24.4	14.7	22.4	41.5
Wages.....mil dol.....	276.8	597.6	65.6	276.1	233.8	301.5	417.1
Cost of materials <sup>1</sup> .....mil dol.....	4 675.3	2 470.9	1 204.4	2 040.3	3 742.3	3 295.5	11 487.7
Materials, parts, containers, etc., consumed <sup>2</sup> .....mil dol.....	4 323.3	1 866.5	1 117.7	1 858.5	3 184.0	2 538.6	10 434.5
Resales.....mil dol.....	219.6	414.0	53.3	137.3	103.9	669.2	836.4
Fuels.....mil dol.....	17.0	33.8	5.8	8.5	230.0	28.7	66.4
Purchased electricity.....mil dol.....	108.7	47.6	21.7	28.9	179.1	42.3	133.8
Contract work.....mil dol.....	6.7	9.0	5.8	7.1	45.4	18.7	18.6
Quantity of electric energy used for heat and power:							
Purchased.....mil kWh.....	2 019.9	901.9	390.6	526.6	4 590.6	795.4	2 205.8
Generated less sold.....mil kWh.....	(D)	(D)	(D)	-	1 915.8	(D)	(D)
Total value of shipments.....mil dol.....	6 294.4	9 798.6	1 650.7	3 865.7	7 045.2	7 023.9	14 373.9
Value added.....mil dol.....	1 624.5	7 338.1	437.0	1 821.7	3 257.5	3 729.9	2 875.6
Inventories by stage of fabrication:							
Beginning of 1992.....mil dol.....	511.4	351.5	297.8	235.9	391.5	342.6	751.4
Finished goods.....mil dol.....	95.8	166.4	87.7	127.6	194.9	181.5	259.9
Work in process.....mil dol.....	9.8	.8	13.3	6.7	20.1	10.9	84.5
Materials and supplies.....mil dol.....	405.7	164.4	196.7	101.8	176.5	150.2	406.9
End of 1992.....mil dol.....	570.7	365.7	316.6	227.2	337.8	347.9	723.9
Finished goods.....mil dol.....	99.1	176.6	81.1	122.8	146.8	183.0	256.5
Work in process.....mil dol.....	11.9	.9	10.5	7.7	22.8	10.9	77.4
Materials and supplies.....mil dol.....	459.6	188.2	225.0	96.7	168.2	154.0	390.0

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	Flour and other grain mill products (SIC 2041)	Cereal breakfast foods (SIC 2043)	Rice milling (SIC 2044)	Prepared flour mixes and doughs (SIC 2045)	Wet corn milling (SIC 2046)	Dog and cat food (SIC 2047)	Prepared feeds, n.e.c. (SIC 2048)
Gross book value of depreciable assets:							
Total:							
Beginning of year.....	5 278.1	3 685.3	544.6	848.0	5 121.1	1 584.4	6 472.3
New capital expenditures <sup>1</sup> .....	253.5	396.6	23.5	160.6	409.2	179.8	183.6
Used capital expenditures.....	6.3	3.3	(D)	18.5	.9	(D)	10.8
Retirements.....	3 565.2	65.3	(D)	13.1	31.5	(D)	68.6
End of year.....	1 972.8	3 999.8	554.4	1 011.9	5 499.7	1 732.6	6 600.1
Buildings and other structures:							
Beginning of year.....	461.0	756.6	131.8	217.2	706.9	350.0	4 207.0
New capital expenditures.....	117.0	56.2	3.7	37.7	50.9	22.9	38.6
Used capital expenditures.....	1.0	(D)	(D)	10.3	(D)	(D)	1.6
Retirements.....	10.2	(D)	(D)	.8	(D)	(D)	11.7
End of year.....	568.8	808.7	135.0	284.5	755.6	370.6	4 235.5
Machinery and equipment:							
Beginning of year.....	4 817.2	2 908.7	412.8	630.8	4 414.2	1 234.4	2 265.3
New capital expenditures <sup>1</sup> .....	136.5	340.4	19.7	122.9	358.3	156.9	145.0
Used capital expenditures.....	5.3	(D)	(D)	6.1	(D)	(D)	9.2
Retirements.....	3 555.0	(D)	(D)	12.4	(D)	(D)	54.9
End of year.....	1 404.0	3 191.1	419.4	747.4	4 743.9	1 362.0	2 364.6
Depreciation charges during 1992:							
Total.....	103.0	227.1	26.2	47.3	288.7	100.6	195.0
Buildings and other structures.....	18.2	24.5	4.1	7.5	29.0	14.5	38.4
Machinery and equipment.....	84.8	202.6	22.1	39.7	257.7	86.2	156.6
Rental payments:							
Total.....	25.4	10.3	6.3	22.5	22.5	26.0	79.7
Buildings and other structures.....	11.4	4.2	3.2	13.4	2.6	16.5	36.0
Machinery and equipment.....	14.1	6.0	3.0	9.1	19.9	9.4	43.7

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

**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	Flour and other grain mill products (SIC 2041)		Cereal breakfast foods (SIC 2043)		Rice milling (SIC 2044)		Prepared flour mixes and doughs (SIC 2045)	
	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	3.0	(X)	17.2	(X)	4	(X)	9.4	(X)
Response coverage ratio (percent) <sup>2</sup>	88.5	(X)	92.5	(X)	88.5	(X)	81.7	(X)
Machinery	37.2	(X)	47.2	(X)	10.2	(X)	16.5	(X)
Response coverage ratio (percent) <sup>2</sup>	90.3	(X)	92.5	(X)	68.5	(X)	86.3	(X)
<b>Other purchased services:</b>								
Communications	4.4	(X)	3.0	(X)	.8	(X)	3.6	(X)
Response coverage ratio (percent) <sup>2</sup>	84.9	(X)	92.5	(X)	68.5	(X)	82.0	(X)
Legal	1.6	(X)	.1	(X)	.6	(X)	2.0	(X)
Response coverage ratio (percent) <sup>2</sup>	86.6	(X)	89.8	(X)	68.5	(X)	84.1	(X)
Accounting and bookkeeping	1.2	(X)	.8	(X)	(S)	(X)	2.1	(X)
Response coverage ratio (percent) <sup>2</sup>	87.8	(X)	89.8	(X)	(S)	(X)	79.5	(X)
Advertising	4.6	(X)	.1	(X)	7.1	(X)	10.9	(X)
Response coverage ratio (percent) <sup>2</sup>	87.9	(X)	89.8	(X)	68.5	(X)	83.9	(X)
Software and other data processing	.7	(X)	1.9	(X)	.2	(X)	1.0	(X)
Response coverage ratio (percent) <sup>2</sup>	82.2	(X)	92.5	(X)	68.5	(X)	79.2	(X)
Refuse removal, including hazardous waste	1.6	(X)	5.5	(X)	(S)	(X)	3.5	(X)
Response coverage ratio (percent) <sup>2</sup>	86.6	(X)	92.5	(X)	(S)	(X)	84.1	(X)
<b>New machinery and equipment expenditures</b>								
Automobiles, trucks, etc., for highway use	136.5	(X)	340.4	(X)	19.7	(X)	122.9	(X)
Computers and peripheral data processing equipment	2.8	25	.3	2	.2	5	3.0	43
All other	2.5	23	7.2	2	4	5	2.2	15
Adjustment ratio <sup>3</sup>	131.3	1	333.0	1	19.2	1	117.7	2
	1.8	(X)	1.1	(X)	1.3	(X)	1.5	(X)
<b>Cost of materials, components, parts, etc., used</b>								
Materials purchased or transferred from foreign sources <sup>4</sup>	4 323.3	(X)	1 968.5	(X)	1 117.7	(X)	1 858.5	(X)
Materials purchased or transferred from domestic sources	49.6	15	85.7	3	—	—	18.6	46
Adjustment ratio <sup>3</sup>	4 273.7	1	1 900.8	1	1 117.7	1	1 839.9	1
	1.3	(X)	1.0	(X)	1.4	(X)	1.5	(X)

Item	Wet corn milling (SIC 2046)		Dog and cat food (SIC 2047)		Prepared feeds, n.e.c. (SIC 2048)	
	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	28.2	(X)	8.3	(X)	34.2	(X)
Response coverage ratio (percent) <sup>2</sup>	84.9	(X)	68.4	(X)	83.6	(X)
Machinery	128.0	(X)	18.4	(X)	120.2	(X)
Response coverage ratio (percent) <sup>2</sup>	94.9	(X)	68.8	(X)	85.6	(X)
<b>Other purchased services:</b>						
Communications	4.0	(X)	2.3	(X)	18.1	(X)
Response coverage ratio (percent) <sup>2</sup>	81.5	(X)	60.3	(X)	83.7	(X)
Legal	1.5	(X)	.7	(X)	163.4	(X)
Response coverage ratio (percent) <sup>2</sup>	94.9	(X)	68.4	(X)	84.0	(X)
Accounting and bookkeeping	.4	(X)	(Z)	(X)	4.9	(X)
Response coverage ratio (percent) <sup>2</sup>	94.9	(X)	68.4	(X)	83.6	(X)
Advertising	1.9	(X)	15.1	(X)	12.9	(X)
Response coverage ratio (percent) <sup>2</sup>	94.9	(X)	68.4	(X)	83.9	(X)
Software and other data processing	1.5	(X)	1.5	(X)	3.4	(X)
Response coverage ratio (percent) <sup>2</sup>	94.9	(X)	68.4	(X)	81.2	(X)
Refuse removal, including hazardous waste	8.8	(X)	5.7	(X)	5.6	(X)
Response coverage ratio (percent) <sup>2</sup>	91.0	(X)	68.6	(X)	82.2	(X)
<b>New machinery and equipment expenditures</b>						
Automobiles, trucks, etc., for highway use	358.3	(X)	156.9	(X)	145.0	(X)
Computers and peripheral data processing equipment	.8	1	.6	19	20.0	24
All other	4.3	1	8.9	10	4.1	19
Adjustment ratio <sup>3</sup>	353.2	1	147.4	1	120.9	5
	1.1	(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>	3 184.0	(X)	2 538.6	(X)	10 434.5	(X)
Materials purchased or transferred from domestic sources	8.0	2	13.1	15	51.4	18
Adjustment ratio <sup>3</sup>	3 176.0	1	2 525.4	1	10 383.0	1
	1.2	(X)	1.7	(X)	1.3	(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	E1	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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>												
Total .....	-	365	13.1	408.9	9.5	21.5	276.8	1 624.5	4 675.3	6 294.4	253.5	570.7
Establishments with an average of—												
1 to 4 employees .....	E7	95	.1	3.8	.1	.2	2.5	14.3	48.4	63.0	.9	3.7
5 to 9 employees .....	E5	45	.3	6.4	.2	.5	4.3	21.4	77.9	99.3	1.4	7.7
10 to 19 employees .....	E2	53	.8	17.9	.6	1.2	12.2	70.0	247.7	318.1	29.1	22.0
20 to 49 employees .....	-	92	3.0	92.7	2.2	5.1	64.5	385.3	1 348.3	1 710.7	52.5	121.2
50 to 99 employees .....	-	48	3.2	102.1	2.3	5.3	67.0	395.7	1 405.1	1 796.8	18.5	169.8
100 to 249 employees .....	-	30	4.2	142.6	3.0	7.2	99.4	611.3	1 391.7	2 002.3	151.3	203.7
250 to 499 employees .....	-	4	1.4	43.4	1.1	2.1	27.0	148.5	156.1	304.2	(D)	42.6
Covered by administrative records <sup>2</sup> .....	E9	72	.1	2.0	.1	.1	1.4	6.4	22.3	28.7	.5	1.9
<b>INDUSTRY 2043, CEREAL BREAKFAST FOODS</b>												
Total .....	-	65	16.1	745.3	13.1	29.7	597.6	7 338.1	2 470.9	9 798.6	396.6	365.7
Establishments with an average of—												
1 to 4 employees .....	E2	13	(Z)	.4	(Z)	(Z)	.2	2.0	1.6	3.6	.1	.4
5 to 9 employees .....	E3	4	(Z)	.4	(Z)	(Z)	.3	3.4	2.1	5.5	(D)	.2
10 to 19 employees .....	-	8	.1	2.3	.1	.1	1.3	21.3	8.9	30.5	.5	1.5
20 to 49 employees .....	E1	10	.3	10.0	.2	.4	5.6	73.5	36.9	110.5	4.2	8.1
50 to 99 employees .....	-	5	.4	8.7	.2	.5	5.1	98.0	26.5	124.3	(D)	4.4
100 to 249 employees .....	E2	8	1.1	33.1	.9	1.7	24.2	326.5	103.5	429.8	34.1	17.1
250 to 499 employees .....	-	7	2.6	118.0	2.1	4.7	94.1	1 237.2	436.7	1 660.4	114.9	63.9
500 to 999 employees .....	-	11	7.0	344.3	5.7	12.9	279.0	3 641.3	1 310.3	4 651.9	162.5	198.5
1,000 to 2,499 employees .....	-	3	4.6	228.1	3.9	9.3	187.8	1 934.8	544.4	2 482.1	60.2	73.6
<b>INDUSTRY 2044, RICE MILLING</b>												
Total .....	-	53	3.9	94.4	3.1	6.7	65.6	437.0	1 204.4	1 650.7	23.5	316.6
Establishments with an average of—												
1 to 4 employees .....	E7	6	(Z)	.2	(Z)	(Z)	.1	1.0	.9	2.0	(Z)	.5
5 to 9 employees .....	E8	6	(Z)	.9	(Z)	(Z)	.1	4.7	8.4	13.2	.2	3.1
10 to 19 employees .....	E1	8	.1	1.8	.1	.2	1.1	8.8	14.5	23.3	.3	3.6
20 to 49 employees .....	-	10	.3	6.8	.3	.8	4.4	29.0	110.1	140.8	1.7	11.2
50 to 99 employees .....	-	12	.9	21.8	.7	1.5	15.4	99.4	271.1	376.0	6.4	32.6
100 to 249 employees .....	-	8	1.3	38.8	.9	2.0	25.5	221.8	423.9	650.5	9.0	82.9
250 to 499 employees .....	-	3	1.2	24.2	1.0	2.3	18.4	72.4	375.3	445.1	5.9	182.8
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>												
Total .....	-	209	15.8	429.2	11.8	24.4	276.1	1 821.7	2 040.3	3 865.7	160.6	227.2
Establishments with an average of—												
1 to 4 employees .....	E7	38	.1	1.3	(Z)	.1	.8	5.9	5.8	11.4	.4	.8
5 to 9 employees .....	E8	22	.1	3.3	.1	.2	2.1	14.5	13.5	27.8	.9	2.3
10 to 19 employees .....	E5	27	.4	9.5	.3	.6	5.2	31.1	32.2	62.8	1.8	6.2
20 to 49 employees .....	E1	41	1.4	33.8	.9	1.9	17.8	97.3	185.9	262.0	4.9	17.9
50 to 99 employees .....	E1	32	2.3	57.5	1.8	3.5	36.7	219.3	292.9	505.8	12.2	32.2
100 to 249 employees .....	-	34	5.2	155.2	3.6	7.5	85.0	689.2	744.8	1 433.9	81.0	91.8
250 to 499 employees .....	-	11	3.8	107.3	2.9	8.1	77.7	558.3	488.9	1 035.5	41.2	55.7
500 to 999 employees .....	-	4	2.5	61.2	2.2	4.7	50.9	206.2	318.7	526.5	18.4	20.4
Covered by administrative records <sup>2</sup> .....	E9	36	.1	1.4	(Z)	.1	.9	6.1	6.0	12.1	.4	.8
<b>INDUSTRY 2046, WET CORN MILLING</b>												
Total .....	-	51	9.2	371.3	6.1	14.7	233.8	3 257.5	3 742.3	7 045.2	409.2	337.8
Establishments with an average of—												
1 to 4 employees .....	E1	9	(Z)	.2	(Z)	(Z)	.1	.8	2.2	3.0	(Z)	.6
5 to 9 employees .....	-	3	(Z)	.3	(Z)	(Z)	.3	1.6	2.3	3.9	.2	.2
10 to 19 employees .....	-	5	.1	1.7	.1	.1	1.3	4.7	13.2	17.9	8.9	2.5
20 to 49 employees .....	-	3	.1	3.0	(Z)	.1	1.7	9.5	20.0	28.7	(D)	1.3
50 to 99 employees .....	-	5	.4	10.9	.3	.6	7.5	86.7	94.2	181.5	3.2	14.4
100 to 249 employees .....	-	11	1.8	74.2	1.3	2.9	45.1	971.1	1 324.4	2 304.9	55.9	74.9
250 to 499 employees .....	-	10	3.2	130.4	2.2	5.8	89.7	1 417.8	1 492.5	2 923.2	211.2	124.8
500 to 999 employees .....	-	4	3.6	150.8	2.3	5.2	88.1	785.4	793.5	1 581.2	129.9	119.2
1,000 to 2,499 employees .....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

See footnotes at end of table.

20D-16 GRAIN MILL PRODUCTS

MANUFACTURES—INDUSTRY SERIES

**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 2047, DOG AND CAT FOOD</b>												
Total .....	-	161	13.8	455.6	10.5	22.4	301.5	3 729.9	3 295.5	7 023.9	179.8	347.9
Establishments with an average of—												
1 to 4 employees .....	E9	29	(Z)	.9	(Z)	.1	.6	7.9	6.5	14.3	.4	.8
5 to 9 employees .....	E8	8	.1	1.1	(Z)	.1	.8	10.7	9.0	19.6	.5	1.0
10 to 19 employees .....	E4	19	.3	6.9	.2	.4	4.1	34.5	35.4	69.9	1.1	4.0
20 to 49 employees .....	E1	38	1.2	28.6	.9	1.8	17.4	154.5	213.4	367.7	25.3	23.3
50 to 99 employees .....	-	26	1.8	41.8	1.4	2.8	29.4	300.9	359.9	681.7	10.5	34.9
100 to 249 employees .....	-	25	4.0	127.9	3.2	6.7	86.9	1 038.3	1 151.8	2 188.2	71.1	80.9
250 to 499 employees .....	-	13	4.5	164.7	3.8	8.3	123.4	1 689.5	1 115.6	2 781.3	54.3	184.8
500 to 999 employees .....	-	3	1.9	83.8	1.0	2.3	38.9	513.6	404.0	821.2	16.6	38.2
Covered by administrative records <sup>2</sup> .....	E9	20	(Z)	.4	(Z)	(Z)	.3	3.7	3.1	6.8	.2	.4
<b>INDUSTRY 2048, PREPARED FEEDS, N.E.C.</b>												
Total .....	E1	1 714	35.5	875.0	19.7	41.5	417.1	2 875.6	11 487.7	14 373.9	183.6	723.9
Establishments with an average of—												
1 to 4 employees .....	E6	373	.8	14.6	.5	.9	7.9	42.1	222.2	264.5	2.5	14.6
5 to 9 employees .....	E1	371	2.5	50.4	1.6	3.5	28.6	152.8	701.1	853.7	10.7	48.8
10 to 19 employees .....	E1	401	5.6	126.8	3.4	7.0	66.6	435.3	2 143.0	2 580.5	20.8	124.6
20 to 49 employees .....	-	424	12.8	317.9	7.5	15.8	162.7	1 180.5	4 811.0	6 001.6	85.9	287.4
50 to 99 employees .....	E2	109	7.3	183.5	4.1	8.9	60.7	822.5	2 232.6	2 857.2	37.8	136.4
100 to 249 employees .....	E2	32	4.8	130.6	2.0	4.2	45.9	334.5	1 074.1	1 406.5	20.5	72.1
250 to 499 employees .....	E6	3	1.6	41.1	.8	1.2	14.8	107.8	303.7	409.7	5.5	40.0
500 to 999 employees .....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records <sup>2</sup> .....	E9	318	.9	11.2	.5	.8	5.5	27.7	116.6	144.3	1.3	7.4

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)				
2041	<b>Flour and other grain mill products:</b>										
	All establishments in industry .....	365	13.1	408.9	9.5	21.5	278.8	1 624.5	4 675.3	6 294.4	253.5
	Establishments with this product class primary:										
20411	Wheat flour, except flour mixes .....	168	8.8	288.9	6.3	14.8	199.5	1 128.5	3 865.1	4 991.4	187.7
20412	Wheat mill products other than flour .....	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
20413	Corn mill products .....	22	1.7	46.3	1.3	3.1	31.4	257.7	378.6	630.5	25.9
20415	Flour mixes and refrigerated and frozen doughs and batters .....	12	1.2	35.2	.9	1.6	21.7	121.6	165.2	285.6	7.5
20416	Other grain mill products .....	7	.5	20.2	.3	.8	12.5	55.4	79.5	138.6	(D)
2043	<b>Cereal breakfast foods:</b>										
	All establishments in industry .....	65	16.1	745.3	13.1	29.7	567.8	7 338.1	2 470.9	9 798.6	396.6
	Establishments with this product class primary:										
20431	Ready to serve cereal breakfast foods, except infant cereals .....	37	14.9	707.4	12.2	27.8	570.1	7 015.5	2 344.3	9 346.9	382.4
20432	Other cereal breakfast foods .....	13	1.1	35.3	.8	1.7	25.5	302.8	119.2	424.5	13.2
2044	<b>Rice milling:</b>										
	All establishments in industry .....	53	3.9	94.4	3.1	6.7	65.8	437.0	1 204.4	1 650.7	23.5
2045	<b>Prepared flour mixes and doughs:</b>										
	All establishments in industry .....	209	15.8	429.2	11.8	24.4	276.1	1 821.7	2 040.3	3 865.7	160.6
2046	<b>Wet corn milling:</b>										
	All establishments in industry .....	51	9.2	371.3	6.1	14.7	233.8	3 257.5	3 742.3	7 045.2	409.2
	Establishments with this product class primary:										
20461	Corn sweeteners .....	18	5.9	242.8	3.9	9.8	157.7	2 457.8	3 021.2	5 513.4	295.8
20462	Manufactured starch .....	17	2.6	104.4	1.7	3.8	61.3	607.8	516.3	1 134.6	104.2
20463	Corn oil .....	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

See footnotes at end of table.

MANUFACTURES—INDUSTRY SERIES

GRAIN MILL PRODUCTS 20D-17

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

Con.

[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)				
2047	<b>Dog and cat food:</b>										
	All establishments in industry -----	181	13.8	455.6	10.5	22.4	301.5	3 729.9	3 295.5	7 023.9	179.8
	Establishments with this product class primary:										
20473	Dog food -----	82	10.0	341.0	7.4	16.0	221.1	2 794.7	2 493.4	5 290.9	117.7
20474	Cat food -----	17	3.2	102.2	2.8	5.5	71.7	858.1	739.8	1 593.5	58.9
2048	<b>Prepared feeds, n.e.c.:</b>										
	All establishments in industry -----	1 714	35.5	875.0	19.7	41.5	417.1	2 875.6	11 487.7	14 373.9	183.6
	Establishments with this product class primary:										
20481	Chicken and turkey feed, supplements, concentrates, and premixes -----	201	5.3	136.4	3.2	7.1	74.8	439.4	4 485.0	4 938.4	41.7
20482	Dairy cattle feed, complete -----	152	4.9	133.4	2.7	6.1	62.8	436.8	1 519.2	1 958.4	22.1
20483	Dairy cattle feed supplements, concentrates, and premixes -----	87	2.3	59.0	1.0	2.0	23.5	183.4	532.0	713.6	12.3
20484	Swine feed, complete -----	40	.7	19.5	.5	.9	9.4	46.8	242.1	287.8	8.9
20485	Swine feed supplements, concentrates, and premixes -----	183	6.1	158.3	2.7	5.2	62.5	542.8	1 523.5	2 063.9	19.7
20486	Beef cattle feed, complete -----	85	2.1	51.7	1.3	3.0	26.3	127.4	459.0	588.9	10.6
20487	Beef cattle feed supplements, concentrates, and premixes -----	78	1.9	41.2	1.1	2.0	19.2	140.0	379.7	519.4	9.2
20488	Other poultry and livestock feed -----	52	1.6	46.8	.9	1.8	19.4	173.5	261.4	433.7	8.5
20489	Other prepared animal feeds, including feeding materials and adjuncts -----	89	1.4	32.1	1.0	2.1	17.8	86.9	214.8	301.9	3.7
2048A	Specialty feeds -----	72	2.7	66.3	1.8	3.7	36.7	302.9	499.0	805.0	16.4

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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>			
Total value of shipments -----	6 294.4	4 984.8	4 932.8
Primary products value of shipments -----	5 916.7	4 556.4	4 590.1
Secondary products value of shipments -----	106.4	80.5	124.8
Total miscellaneous receipts -----	271.2	348.0	217.9
Value of resales -----	267.0	342.6	206.6
Contract receipts ----- (D)	(D)	3.1	(D)
Other miscellaneous receipts ----- (D)	(D)	2.3	(D)
Primary products specialization ratio -----	98	98	97
Value of primary products shipments made in all industries -----	6 194.8	4 690.1	4 871.6
Value of primary products shipments made in this industry -----	5 916.7	4 556.4	4 590.1
Value of primary products shipments made in other industries -----	278.1	133.7	281.5
Coverage ratio -----	96	97	94
<b>INDUSTRY 2043, CEREAL BREAKFAST FOODS</b>			
Total value of shipments -----	9 798.6	6 565.7	4 131.9
Primary products value of shipments -----	7 507.3	4 984.5	2 982.9
Secondary products value of shipments -----	1 445.2	1 282.2	885.2
Total miscellaneous receipts -----	846.1	319.0	263.8
Value of resales -----	840.4	318.3	261.9
Contract receipts ----- (D)	(D)	(D)	—
Other miscellaneous receipts ----- (D)	(D)	(D)	1.9
Primary products specialization ratio -----	84	79	77
Value of primary products shipments made in all industries -----	7 795.4	5 081.1	3 111.5
Value of primary products shipments made in this industry -----	7 507.3	4 984.5	2 982.9
Value of primary products shipments made in other industries -----	288.1	116.6	128.6
Coverage ratio -----	96	98	96

20D-18 GRAIN MILL PRODUCTS

MANUFACTURES—INDUSTRY SERIES

**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 2044, RICE MILLING</b>			
Total value of shipments .....	1 650.7	1 234.9	(NA)
Primary products value of shipments .....	(D)	1 199.4	(NA)
Secondary products value of shipments .....	(D)	24.4	(NA)
Total miscellaneous receipts .....	64.4	11.1	(NA)
Value of resales .....	58.0	8.2	(NA)
Contract receipts .....	(D)	(D)	(NA)
Other miscellaneous receipts .....	(D)	(D)	(NA)
Primary products specialization ratio .....	(D)	98	(NA)
Value of primary products shipments made in all industries .....	1 617.9	1 257.5	(NA)
Value of primary products shipments made in this industry .....	1 545.0	1 199.4	(NA)
Value of primary products shipments made in other industries .....	72.8	58.1	(NA)
Coverage ratio .....	(D)	95	(NA)
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>			
Total value of shipments .....	3 865.7	2 625.1	(NA)
Primary products value of shipments .....	3 342.4	2 209.2	(NA)
Secondary products value of shipments .....	320.0	282.4	(NA)
Total miscellaneous receipts .....	203.3	133.5	(NA)
Value of resales .....	197.2	128.5	(NA)
Contract receipts .....	2.7	(D)	(NA)
Other miscellaneous receipts .....	3.5	(D)	(NA)
Primary products specialization ratio .....	91	89	(NA)
Value of primary products shipments made in all industries .....	3 898.4	2 821.6	(NA)
Value of primary products shipments made in this industry .....	3 342.4	2 209.2	(NA)
Value of primary products shipments made in other industries .....	556.0	612.4	(NA)
Coverage ratio .....	86	78	(NA)
<b>INDUSTRY 2046, WET CORN MILLING</b>			
Total value of shipments .....	7 045.2	4 788.9	3 268.4
Primary products value of shipments .....	6 099.3	4 157.3	2 852.2
Secondary products value of shipments .....	823.2	559.1	381.4
Total miscellaneous receipts .....	122.7	72.5	54.8
Value of resales .....	112.7	68.8	50.5
Contract receipts .....	(D)	(D)	(D)
Other miscellaneous receipts .....	(D)	(D)	(D)
Primary products specialization ratio .....	88	88	89
Value of primary products shipments made in all industries .....	6 415.5	4 446.2	3 105.7
Value of primary products shipments made in this industry .....	6 099.3	4 157.3	2 852.2
Value of primary products shipments made in other industries .....	316.2	288.9	253.5
Coverage ratio .....	95	94	92
<b>INDUSTRY 2047, DOG AND CAT FOOD</b>			
Total value of shipments .....	7 023.9	5 069.3	(NA)
Primary products value of shipments .....	(D)	4 556.2	(NA)
Secondary products value of shipments .....	(D)	48.6	(NA)
Total miscellaneous receipts .....	(D)	466.6	(NA)
Value of resales .....	(D)	(D)	(NA)
Contract receipts .....	(D)	(D)	(NA)
Other miscellaneous receipts .....	3.1	7.0	(NA)
Primary products specialization ratio .....	(D)	99	(NA)
Value of primary products shipments made in all industries .....	6 318.2	4 710.2	(NA)
Value of primary products shipments made in this industry .....	6 128.4	4 556.2	(NA)
Value of primary products shipments made in other industries .....	187.8	154.0	(NA)
Coverage ratio .....	(D)	97	(NA)
<b>INDUSTRY 2048, PREPARED FEEDS, N.E.C.</b>			
Total value of shipments .....	14 373.9	11 468.2	(NA)
Primary products value of shipments .....	13 113.9	10 320.0	(NA)
Secondary products value of shipments .....	260.9	207.0	(NA)
Total miscellaneous receipts .....	999.1	941.3	(NA)
Value of resales .....	968.9	844.9	(NA)
Contract receipts .....	22.8	40.9	(NA)
Other miscellaneous receipts .....	9.4	55.5	(NA)
Primary products specialization ratio .....	98	98	(NA)
Value of primary products shipments made in all industries .....	13 285.6	10 712.9	(NA)
Value of primary products shipments made in this industry .....	13 113.9	10 320.0	(NA)
Value of primary products shipments made in other industries .....	171.7	392.9	(NA)
Coverage ratio .....	99	96	(NA)

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	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>2041—</b>	<b>FLOUR AND OTHER GRAIN MILL PRODUCTS</b>						
	Total.....	(NA)	(X)	6 194.8	(NA)	(X)	4 690.1
20411	Wheat flour, except flour mixes.....	(NA)	(X)	4 192.4	(NA)	(X)	3 218.7
	White flour:						
	Shipped for export:						
20411 05	Commercial dollar exports, all white flour types .....1,000 sacks (cwt)...	9		15 383.8	148.8	12	17 310.6
20411 07	All other exports of white flour, such as those under Public Law 480 .....1,000 sacks (cwt)...	5	(D)		(D)	5	(S)
	Domestic shipments:						
	Bakers' and institutional white bread-type flours:						
20411 11	Shipped in bulk cars or trucks.....1,000 sacks (cwt)...	22		174 188.0	1 772.5	21	**149 500.8
20411 13	Shipped in containers, including tote bins.....1,000 sacks (cwt)...	15		40 922.2	441.6	16	23 528.3
	Bakers' and institutional soft wheat flour (bakery, restaurant, etc.):						
20411 15	Shipped in bulk cars or trucks.....1,000 sacks (cwt)...	26		43 425.0	408.4	24	38 640.3
20411 17	Shipped in containers, including tote bins.....1,000 sacks (cwt)...	13		8 568.7	84.4	20	8 692.7
	Family white flour, other than self-rising:						
20411 21	Shipped in containers less than 25 lb .....1,000 sacks (cwt)...	25		32 972.3	513.2	24	*29 069.2
20411 23	Shipped in containers 25 lb or more .....1,000 sacks (cwt)...	19	*8	163.3	98.0	18	*9 907.7
20411 28	Self-rising family white flour .....1,000 sacks (cwt)...	16		6 178.0	109.7	15	3 684.1
	Flour shipped to blenders or other processors: For use in food products (mixes, refrigerated doughs, soups, etc.).....1,000 sacks (cwt)...	13		15 291.5	140.8	12	**9 795.5
20411 28	For use in nonfood products (pet food, industrial, etc.) .....1,000 sacks (cwt)...	7		2 640.0	15.9	10	*3 062.3
	Other than white flour:						
20411 31	Whole wheat .....1,000 sacks (cwt)...	24		5 853.2	82.4	16	5 383.4
20411 51	Durum flour and semolina .....1,000 sacks (cwt)...	8		33 208.1	295.0	10	26 727.8
20411 61	Bulgur .....1,000 sacks (cwt)...	3	(D)		(D)	5	(S)
20411 98	Other wheat flour, including farina .....1,000 sacks (cwt)...	7		4 663.9	46.3	10	2 022.7
20411 00	Wheat flour, except flour mixes, n.s.k. ....	(NA)	(X)		.8	(NA)	(X)
20412	Wheat mill products other than flour .....	(NA)	(X)		494.4	(NA)	(X)
20412 13	Wheat mill feed .....1,000 s tons...	48		6 325.6	461.9	42	*5 353.7
20412 19	Other wheat mill products, including wheat germ, wheat bran, etc. ....1,000 s tons...	19		573.6	32.5	20	307.4
20412 00	Wheat mill products other than flour, n.s.k. ....	(NA)	(X)		-	(NA)	(X)
20413	Corn mill products .....	(NA)	(X)		775.7	(NA)	(X)
	Corn products for human consumption:						
20413 11	Whole cornmeal .....1,000 sacks (cwt)...	14		4 251.8	56.5	14	(S)
20413 15	Degermed cornmeal .....1,000 sacks (cwt)...	11	(S)		66.7	11	*11 856.6
20413 21	Corn grits and hominy, except for brewers' use .....1,000 sacks (cwt)...	8	(D)		(D)	7	**8 310.1
20413 23	Corn grits and flakes for brewers' use.....1,000 sacks (cwt)...	5		5 039.4	37.7	4	*3 147.9
20413 85	Hominy feed, cornmeal, and other byproducts of dry corn milling (for animal feed) .....1,000 s tons...	23		1 502.1	121.2	18	*823.7
20413 93	Corn flour .....1,000 sacks (cwt)...	11		13 930.9	193.5	8	(S)
	Other corn mill products:						
20413 95	For human consumption .....1,000 sacks (cwt)...	18		16 627.2	192.7	8	8 272.0
20413 97	Not for human consumption.....1,000 sacks (cwt)...	4	(D)		(D)	5	1 095.5
20413 00	Corn mill products, n.s.k. ....	(NA)	(X)		-	(NA)	(X)
20415	Flour mixes and refrigerated and frozen doughs and batters <sup>3</sup> .....	(NA)	(X)		345.9	(NA)	(X)
	Flour mixes:						
20415 11	Pancake and waffle mixes .....1,000 sacks (cwt)...	11		2 444.3	65.8	(NA)	(D)
20415 13	Cake mixes, including gingerbread .....1,000 sacks (cwt)...	5		341.5	15.1	(NA)	(D)
20415 15	Biscuit mixes .....1,000 sacks (cwt)...	13		1 350.5	50.2	(NA)	(D)
20415 17	Pie crust mixes .....1,000 sacks (cwt)...	1	(D)		(D)	1	(D)
20415 19	Doughnuts and other sweet yeast goods mixes .....1,000 sacks (cwt)...	1	(D)		(D)	3	(D)
20415 21	Bread and bread-type roll mixes .....1,000 sacks (cwt)...	9		1 140.1	48.4	(NA)	(D)

See footnotes at end of table.

**20D-20 GRAIN MILL PRODUCTS**

**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	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>2041—</b>	<b>FLOUR AND OTHER GRAIN MILL PRODUCTS—Con.</b>								
20415	Flour mixes and refrigerated and frozen doughs and batters <sup>3</sup> —Con.								
20415 25	Flour mixes—Con. Other prepared flour mixes, including cookie mixes... 1,000 sacks (cwt)---	14	**6 126.6	160.4	(NA)	(D)	(D)		
	Refrigerated doughs and batters:								
20415 81	Biscuit dough .....mil lb..	(NA)	—	—	(NA)	—	—		
20415 85	Bread and bread-type roll dough, including dinner .....mil lb..	(NA)	—	—	(NA)	—	—		
20415 88	Cookie dough .....mil lb..	(NA)	—	—	(NA)	—	—		
20415 88	Pasta dough .....mil lb..	(NA)	—	—	(NA)	—	—		
20415 89	Other doughs and batters, including pizza, coffeecake, pancake, etc. ....mil lb..	3	(S)	1.3	(NA)	(D)	(D)		
	Frozen doughs and batters:								
20415 91	Bread and bread-type roll dough .....mil lb..	1	(D)	(D)	1	(D)	(D)		
20415 92	Cookie dough .....mil lb..	—	(D)	(D)	—	—	—		
20415 95	Other frozen doughs and batters, including pizza, coffeecake, pancake, etc. ....mil lb..	1	(D)	(D)	(NA)	—	—		
20415 00	Flour mixes and refrigerated and frozen doughs and batters, n.s.k. ....	(NA)	(X)	—	(NA)	(X)	—		
20418	Other grain mill products ..... 1,000 sacks (cwt)---	(NA)	(X)	173.4	(NA)	(X)	82.2		
20418 13	Rye, oats, buckwheat, and other flour ..... 1,000 sacks (cwt)---	10	5 225.9	63.4	(NA)	(D)	(D)		
20418 27	Other mill feed (oats, rye, buckwheat, etc.) ..... 1,000 sacks (cwt)---	9	947.9	110.0	9	(D)	(D)		
20418 00	Other grain mill products, n.s.k. ....	(NA)	(X)	—	(NA)	(X)	1.4		
20410	Flour and other grain mill products, n.s.k. ....	(NA)	(X)	213.0	(NA)	(X)	150.5		
20410 00	Flour and other grain mill products, n.s.k. <sup>4</sup> .....	(NA)	(X)	184.3	(NA)	(X)	13.5		
20410 02	Flour and other grain mill products, n.s.k. <sup>5</sup> .....	(NA)	(X)	28.7	(NA)	(X)	137.0		
<b>2043—</b>	<b>CEREAL BREAKFAST FOODS</b>								
	Total .....	(NA)	(X)	7 795.4	(NA)	(X)	5 081.1		
20431	Ready to serve cereal breakfast foods, except infant cereals .....	(NA)	(X)	7 269.6	(NA)	(X)	(NA)		
	Corn flakes and other corn breakfast foods:								
20431 01	With fruits and/or nuts .....mil lb..	4	—	1 400.6	9	801.9	1 302.3		
20431 03	Without fruits or nuts .....mil lb..	12	(S)	—	—	—	—		
	Wheat flakes and other wheat breakfast foods:								
20431 05	With fruits and/or nuts .....mil lb..	8	—	1 801.7	10	841.7	1 359.6		
20431 07	Without fruits or nuts .....mil lb..	13	—	—	—	—	—		
	Oat breakfast foods:								
20431 09	With fruits and/or nuts .....mil lb..	12	—	1 307.2	10	382.3	706.9		
20431 11	Without fruits and/or nuts .....mil lb..	8	(S)	—	—	—	—		
	Rice breakfast foods:								
20431 13	With fruits and/or nuts .....mil lb..	2	—	681.7	9	257.1	518.1		
20431 16	Without fruits or nuts .....mil lb..	9	429.7	—	—	—	—		
	Preparations of other grains and mixed grains:								
20431 18	With fruits and/or nuts .....mil lb..	13	—	2 078.4	13	366.0	743.1		
20431 19	Without fruits or nuts .....mil lb..	13	(S)	—	—	—	—		
20431 00	Ready to serve cereal breakfast foods, except infant cereals, n.s.k. ....	(NA)	(X)	—	(NA)	(X)	(NA)		
20432	Other cereal breakfast foods .....	(NA)	(X)	495.6	(NA)	(X)	(NA)		
20432 01	Infants' cereals, all types .....mil lb..	3	(D)	(D)	4	(D)	(D)		
20432 03	Instant hot cereals, all types of grains (mix with hot water and eat type) .....mil lb..	5	(D)	(D)	3	(D)	(D)		
	Cereals to be cooked before serving, except instant and infants':								
20432 05	Farina and other wheat foods .....mil lb..	5	81.0	94.3	5	82.0	60.2		
20432 07	Rolled oats and oatmeal .....mil lb..	7	422.3	169.0	4	287.7	120.5		
20432 09	Preparations of other grains and mixed grains .....mil lb..	5	*7.9	9.7	3	9.8	9.0		
20432 00	Other cereal breakfast foods, n.s.k. ....	(NA)	(X)	3.4	(NA)	(X)	(NA)		
20430	Cereal breakfast foods, n.s.k. ....	(NA)	(X)	30.2	(NA)	(X)	15.9		
20430 00	Cereal breakfast foods, n.s.k. <sup>6</sup> .....	(NA)	(X)	30.2	(NA)	(X)	6.2		
20430 02	Cereal breakfast foods, n.s.k. <sup>7</sup> .....	(NA)	(X)	—	(NA)	(X)	9.7		
<b>2044—</b>	<b>RICE MILLING</b>								
	Total .....	(NA)	(X)	1 617.9	(NA)	(X)	1 257.5		
20440	Milled rice and byproducts .....	(NA)	(X)	1 617.9	(NA)	(X)	1 257.5		
	Head rice not packaged with other ingredients:								
20440 11	Packed in bags 100 lb or more .....mil lb..	30	5 178.1	594.0	30	**5 387.2	517.7		
20440 15	Packed in containers 3 lb or less .....mil lb..	16	814.7	250.6	12	727.9	108.1		
20440 17	Packed in all other containers .....mil lb..	19	2 502.9	526.7	18	*3 321.7	446.3		
20440 21	Second heads .....mil lb..	14	475.8	56.0	15	892.2	48.8		
20440 35	Screenings and brewers' rice .....mil lb..	17	(S)	35.9	15	657.4	33.2		
20440 51	Bran .....mil lb..	20	**733.3	23.7	14	(S)	14.8		
20440 98	Sharps and other residues and byproducts .....mil lb..	9	1 089.4	18.1	—	—	—		
20440 93	All other milled rice, including rice flour .....mil lb..	8	610.7	92.1	12	(S)	65.0		
20440 00	Rice milling, n.s.k. <sup>8</sup> .....	(NA)	(X)	20.7	(NA)	(X)	8.8		
20440 02	Rice milling, n.s.k. <sup>7</sup> .....	(NA)	(X)	—	(NA)	(X)	16.8		

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 appendices. 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)
<b>2045—</b>	<b>PREPARED FLOUR MIXES AND DOUGHS</b>						
	Total.....	(NA)	(X)	3 898.4	(NA)	(X)	2 821.6
20450	Flour mixes and refrigerated and frozen doughs and batters.....	(NA)	(X)	3 898.4	(NA)	(X)	2 821.6
20450 11	Flour mixes:						
	Pancake and waffle mixes.....1,000 sacks (cwt).....	18		3 049.2	188.0	(NA)	(D)
20450 13	Cake mixes, including gingerbread.....1,000 sacks (cwt).....	20		7 855.0	629.7	(NA)	(D)
20450 15	Biscuit mixes.....1,000 sacks (cwt).....	13		4 093.9	137.2	(NA)	(D)
20450 17	Pie crust mixes.....1,000 sacks (cwt).....	5		258.4	19.7	6	(D)
20450 19	Doughnuts and other sweet yeast goods mixes.....1,000 sacks (cwt).....	21	**10	232.4	338.8	14	5 858.8
20450 21	Bread and bread-type roll mixes.....1,000 sacks (cwt).....	18	*	522.9	128.7	(NA)	(D)
20450 25	Other prepared flour mixes, including cookie mixes.....1,000 sacks (cwt).....	32		28 097.5	481.1	(NA)	(D)
	Refrigerated doughs and batters:						
20450 81	Biscuit dough.....mil lb.....	4	(D)	(D)	(D)	4	(D)
20450 85	Bread and bread-type roll dough, including dinner.....mil lb.....	2	(D)	(D)	(D)	2	(D)
20450 88	Cookie dough.....mil lb.....	2	(D)	(D)	(D)		
20450 88	Pasta dough.....mil lb.....	-		-	-		
20450 89	Other doughs and batters, including pizza, coffeecake, pancake, etc.....mil lb.....	9		336.2	162.3	12	(D)
	Frozen doughs and batters:						
20450 81	Bread and bread-type roll dough.....mil lb.....	29	*1	227.5	448.5	28	(D)
20450 82	Cookie dough.....mil lb.....	29		129.0	150.0		
20450 95	Other doughs and batters, including pizza, coffeecake, pancake, etc.....mil lb.....	51		1 109.3	574.8	30	529.0
20450 00	Prepared flour mixes and doughs, n.s.k. <sup>4</sup> .....	(NA)	(X)	82.2	(NA)	(X)	24.5
20450 02	Prepared flour mixes and doughs, n.s.k. <sup>5</sup> .....	(NA)	(X)	16.2	(NA)	(X)	67.2
<b>2046—</b>	<b>WET CORN MILLING</b>						
	Total.....	(NA)	(X)	6 415.5	(NA)	(X)	4 446.2
20461	Corn sweeteners.....	(NA)	(X)	2 911.0	(NA)	(X)	2 182.5
	Glucose syrup (corn syrup):						
20461 03	Type I (20 up to 38 dextrose equivalent).....mil lb.....	5		1 028.9	102.1	4	1 281.4
20461 04	Type II (38 up to 58 dextrose equivalent).....mil lb.....	7		3 245.0	321.2	7	3 058.4
20461 13	Type III (58 up to 90 dextrose equivalent).....mil lb.....	5		1 384.3	134.9	4	677.8
20461 16	Type IV (90 dextrose equivalent or more).....mil lb.....	3	(D)	(D)	(D)	2	(D)
20461 18	Glucose syrup solids (dried glucose syrup) and maltodextrins less than 20 dextrose equivalent.....mil lb.....	4		328.2	78.9	(NA)	(D)
20461 23	Dextrose monohydrate and dextrose anhydrous.....mil lb.....	3	(D)	(D)	(D)	(NA)	(NA)
	High fructose corn syrup (HFCS):						
20461 25	20 up to 50 percent fructose.....mil lb.....	8		6 961.4	693.3	(NA)	(NA)
20461 29	50 percent or more fructose, including crystalline fructose (adjusted to a liquid equivalent, 77 percent solids basis).....mil lb.....	7		10 787.7	1 198.7	(NA)	(NA)
20461 00	Corn sweeteners, n.s.k.....	(NA)	(X)	-	-	(NA)	(X)
20462	Manufactured starch.....	(NA)	(X)	1 305.5	(NA)	(X)	774.3
	Corn (including sorghum) starch and dextrin:						
20462 11	Modified.....mil lb.....	13		3 907.1	872.0	(NA)	(NA)
20462 13	Not modified.....mil lb.....	11		2 853.7	330.8	(NA)	(NA)
	Other starch and dextrin (potato, rice, wheat, etc.):						
20462 15	Modified.....mil lb.....	5	(D)	(D)	(D)	(NA)	(NA)
20462 17	Not modified.....mil lb.....	7	(D)	(D)	(D)	(NA)	(NA)
20462 00	Manufactured starch, n.s.k.....	(NA)	(X)	4.8	(NA)	(X)	9.8
20463	Corn oil.....	(NA)	(X)	801.6	(NA)	(X)	613.1
20463 53	Crude.....mil lb.....	10		1 085.0	240.5	10	1 186.6
20463 54	Once-refined, after alkali or caustic wash, but before deodorizing or use in end products.....mil lb.....	3		57.0	17.2	3	(D)
20463 56	Fully-refined, including margarine oil.....mil lb.....	8		1 339.2	511.7	9	(D)
20463 59	Once-refined, purchased and deodorized only.....mil lb.....	5	*	85.5	32.2	5	(D)
20463 00	Corn oil, n.s.k.....	(NA)	(X)	-	-	(NA)	(X)
20464	Wet process corn byproducts.....	(NA)	(X)	1 363.5	(NA)	(X)	845.8
20464 62	Corn gluten feed.....mil lb.....	9		11 903.5	659.5	10	9 064.6
20464 65	Corn gluten meal.....mil lb.....	11		2 598.7	352.2	11	1 896.3
20464 72	Gluten (except corn), including wheat, rice, potato, etc.....mil lb.....	1	(D)	(D)	(D)	6	669.1
20464 75	Other wet process corn byproducts, including steepwater concentrate (50 percent solids basis).....mil lb.....	9	(D)	(D)	(D)	8	1 386.1
20464 00	Wet process corn byproducts, n.s.k.....	(NA)	(X)	-	-	(NA)	(X)
20460	Wet corn milling, n.s.k.....	(NA)	(X)	34.0	(NA)	(X)	30.5
20460 00	Wet corn milling, n.s.k. <sup>6</sup> .....	(NA)	(X)	34.0	(NA)	(X)	21.0
20460 02	Wet corn milling, n.s.k. <sup>7</sup> .....	(NA)	(X)	-	-	(NA)	(X)

See footnotes at end of table.

**20D-22 GRAIN MILL PRODUCTS**

**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	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>2047—</b>	<b>DOG AND CAT FOOD</b>						
	Total .....	(NA)	(X)	6 316.2	(NA)	(X)	4 710.2
20473	Dog food .....	(NA)	(X)	3 899.8	(NA)	(X)	3 074.6
	Canned:						
20473 21	Ration type ..... mil lb.	14	888.4	259.5	13	682.3	189.5
20473 23	Other ..... mil lb.	16	2 018.2	842.8	12	1 345.5	613.7
	Dry and semimoist:						
20473 26	Shipped in packages less than 25 lb ..... mil lb.	52	**2 785.4	1 111.5	38	3 631.2	979.1
20473 38	Shipped in packages 25 lb or more ..... mil lb.	74	**5 610.7	1 658.0	71	4 924.2	1 255.0
20473 00	Dog food, n.s.k. ....	(NA)	(X)	28.0	(NA)	(X)	37.3
20474	Cat food .....	(NA)	(X)	2 271.1	(NA)	(X)	1 446.3
	Canned:						
20474 41	Fish base ..... mil lb.	12	2 031.5	727.7	17	1 063.2	366.4
20474 43	Meat base ..... mil lb.	16	801.0	410.0	13	441.0	269.6
20474 45	Other (ration meal base) ..... mil lb.	3	210.4	44.2	4	(D)	(D)
20474 54	Dry ..... mil lb.	41	**1 809.0	974.1	32	1 338.2	640.5
20474 57	Semimoist ..... mil lb.	7	99.7	104.3	6	(D)	(D)
20474 00	Cat food, n.s.k. ....	(NA)	(X)	10.8	(NA)	(X)	9.2
20470	Dog and cat food, n.s.k. ....	(NA)	(X)	145.3	(NA)	(X)	189.2
20470 00	Dog and cat food, n.s.k.*	(NA)	(X)	138.5	(NA)	(X)	131.1
20470 02	Dog and cat food, n.s.k.†	(NA)	(X)	6.8	(NA)	(X)	58.1
<b>2048—</b>	<b>PREPARED FEEDS, N.E.C.</b>						
	Total .....	(NA)	(X)	13 285.6	(NA)	(X)	10 712.9
20481	Chicken and turkey feed, supplements, concentrates, and premixes .....	(NA)	(X)	4 890.3	(NA)	(X)	3 378.5
	Complete feeds:						
	Chicken:						
20481 11	Starter-grower ..... 1,000 s tons	84	3 630.6	571.2	89	2 365.4	348.5
20481 15	Layer-breeder ..... 1,000 s tons	111	4 843.6	679.3	123	4 740.8	628.0
20481 18	Broiler ..... 1,000 s tons	47	15 861.5	2 563.0	50	9 238.1	1 355.6
20481 18	Turkey ..... 1,000 s tons	54	3 143.1	458.9	53	2 092.9	376.2
	Feed supplements and concentrates:						
	Chicken:						
20481 21	Starter-grower ..... 1,000 s tons	14	(S)	18.9	23	(S)	75.7
20481 22	Layer-breeder ..... 1,000 s tons	28	* 233.4	60.3	31	530.3	106.1
20481 23	Broiler ..... 1,000 s tons	9	581.4	133.0	13	(S)	123.4
20481 24	Turkey ..... 1,000 s tons	11	**28.3	6.6	18	**118.8	26.6
	Feed premixes (feed-base):						
	Chicken:						
20481 31	Starter-grower ..... 1,000 s tons	6	(D)	(D)	16	190.3	31.6
20481 32	Layer-breeder ..... 1,000 s tons	14	**58.8	27.8	20	(S)	23.1
20481 33	Broiler ..... 1,000 s tons	6	(S)	15.2	11	(S)	35.0
20481 34	Turkey ..... 1,000 s tons	3	(D)	(D)	8	15.7	6.2
20481 00	Chicken and turkey feed, supplements, concentrates, and premixes, n.s.k. ....	(NA)	(X)	334.8	(NA)	(X)	242.5
20482	Dairy cattle feed, complete .....	(NA)	(X)	1 454.7	(NA)	(X)	1 221.5
20482 00	Dairy cattle feed, complete ..... 1,000 s tons	184	*11 781.0	1 454.7	184	8 620.4	1 221.5
20483	Dairy cattle feed supplements, concentrates, and premixes .....	(NA)	(X)	678.5	(NA)	(X)	543.0
20483 01	Feed supplements and concentrates ..... 1,000 s tons	125	3 198.9	532.0	99	1 680.3	398.2
20483 02	Feed premixes (feed-base) ..... 1,000 s tons	46	* 323.2	127.8	(NA)	**213.5	87.2
20483 00	Dairy cattle feed supplements, concentrates, and premixes, n.s.k. ....	(NA)	(X)	18.6	(NA)	(X)	57.8
20484	Swine feed, complete .....	(NA)	(X)	541.9	(NA)	(X)	416.3
20484 00	Swine feed, complete ..... 1,000 s tons	151	* 2 528.5	541.9	173	2 144.5	416.3
20485	Swine feed supplements, concentrates, and premixes .....	(NA)	(X)	1 181.4	(NA)	(X)	1 265.6
20485 03	Feed supplements and concentrates ..... 1,000 s tons	100	4 504.7	906.8	109	3 380.8	930.4
20485 04	Feed premixes (feed-base) ..... 1,000 s tons	59	* 441.8	246.8	59	627.3	258.8
20485 00	Swine feed supplements, concentrates, and premixes, n.s.k. ....	(NA)	(X)	27.7	(NA)	(X)	76.5
20488	Beef cattle feed, complete .....	(NA)	(X)	524.2	(NA)	(X)	431.2
20488 00	Beef cattle feed, complete ..... 1,000 s tons	141	**3 611.0	524.2	133	* 3 056.9	431.2

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	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>2048—</b>	<b>PREPARED FEEDS, N.E.C.—Con.</b>						
20487	Beef cattle feed supplements, concentrates, and premixes.....	(NA)	(X)	823.0	(NA)	(X)	548.1
20487 05	Feed supplements and concentrates.....1,000 s tons.....	88	4 340.7	522.1	102	*2 642.4	476.2
20487 06	Feed premixes (feed-base).....1,000 s tons.....	41	(S)	94.3	33	191.5	66.9
20487 00	Beef cattle feed supplements, concentrates, and premixes, n.s.k.....	(NA)	(X)	6.7	(NA)	(X)	5.0
20488	Other poultry and livestock feed.....	(NA)	(X)	511.9	(NA)	(X)	425.6
20488 11	Poultry: Complete feeds (duck, etc.).....1,000 s tons.....	18	*120.8	18.7	16	**85.4	12.7
20488 12	Feed supplements and concentrates (duck, etc.).....1,000 s tons.....	5	(D)	(D)	5	(S)	5.0
20488 13	Feed premixes (feed-base) (duck, etc.).....1,000 s tons.....	1	(D)	(D)	9	338.3	52.9
20488 16	Livestock: Complete livestock feeds: Horse and mule.....1,000 s tons.....	111	*1 379.2	250.1	118	1 316.1	225.1
20488 21	Other (sheep, etc.).....1,000 s tons.....	45	*301.7	69.5	46	*275.2	45.8
20488 23	Livestock feed supplements and concentrates: Horse and mule.....1,000 s tons.....	23	(S)	11.3	22	98.5	18.1
20488 25	Other (sheep, etc.).....1,000 s tons.....	27	**146.0	41.8	30	*183.9	26.4
20488 31	Livestock feed premixes (feed-base): Horse and mule.....1,000 s tons.....	7	(S)	2.0	12	*38.6	6.6
20488 33	Other (sheep, etc.).....1,000 s tons.....	10	(S)	20.8	12	(S)	10.9
20488 00	Other poultry and livestock feed, n.s.k.....	(NA)	(X)	33.2	(NA)	(X)	22.1
20489	Other prepared animal feeds, including feeding materials and adjuncts.....	(NA)	(X)	485.4	(NA)	(X)	468.1
20489 11	Grain: ground, rolled, pulverized, chopped, or crimped, excluding commmeal.....1,000 sacks (cwt).....	69	(S)	106.6	67	32.3	211.4
20489 22	Mineral mixtures, including oyster shells prepared for feed use.....mil lb.....	49	(S)	157.1	56	**1 486.7	134.1
20489 35	Alfalfa meal: Dehydrated.....1,000 s tons.....	23	(S)	30.3	29	(S)	35.2
20489 39	Sun cured and cubed.....1,000 s tons.....	18	(S)	23.3	19	(S)	47.9
20489 41	Other.....1,000 s tons.....	29	(S)	101.5	(NA)	(X)	39.6
20489 00	Other prepared animal feeds, including feeding materials and adjuncts, n.s.k.....	(NA)	(X)	46.8	(NA)	(X)	41.4
2048A	Specialty feeds.....	(NA)	(X)	747.4	(NA)	(X)	537.8
2048A 01	Fresh and frozen meat of horses and other animals for pet food.....mil lb.....	11	342.7	61.0	18	(S)	52.4
2048A 03	Other pet food, except dog and cat.....mil lb.....	11	(S)	156.9	14	(S)	107.5
2048A 05	Laboratory (mouse, guinea pig, etc.).....1,000 s tons.....	8	72.5	35.4	7	89.3	24.0
2048A 07	Fur (mink, fox, etc.).....1,000 s tons.....	6	11.8	2.5	9	**61.1	9.8
2048A 09	Bird (wild, tame, pigeon, game).....1,000 s tons.....	31	(S)	143.0	29	*242.2	105.3
2048A 11	Rabbit.....1,000 s tons.....	35	**174.5	37.5	38	154.0	27.9
2048A 12	Fish.....1,000 s tons.....	30	(S)	167.1	45	741.1	169.5
2048A 19	Other.....1,000 s tons.....	24	(S)	92.5	(NA)	(X)	41.4
2048A 00	Specialty feeds, n.s.k.....	(NA)	(X)	51.5	(NA)	(X)	41.4
20480	Prepared feeds, n.e.c., n.s.k.....	(NA)	(X)	1 666.8	(NA)	(X)	1 477.1
20480 00	Prepared feeds, n.e.c., n.s.k. <sup>10</sup> .....	(NA)	(X)	1 520.4	(NA)	(X)	1 025.3
20480 02	Prepared feeds, n.e.c., n.s.k. <sup>11</sup> .....	(NA)	(X)	146.4	(NA)	(X)	451.8

<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>This product class is primary to more than one industry.

<sup>4</sup>Typically for establishments with 10 employees or more.

<sup>5</sup>Typically for establishments with less than 10 employees.

<sup>6</sup>For 1992, there were no administrative-record cases for this industry. For 1987, data for this product code are typically for establishments with 10 employees or more.

<sup>7</sup>For 1992, there were no administrative-record cases for this industry. For 1987, data for this product code are typically for establishments with less than 10 employees.

<sup>8</sup>For 1992, there were no administrative-record cases for this industry. For 1987, data for this product code are typically for establishments with 5 employees or more.

<sup>9</sup>For 1992, there were no administrative-record cases for this industry. For 1987, data for this product code are typically for establishments with less than 5 employees.

<sup>10</sup>Typically for establishments with 5 employees or more.

<sup>11</sup>Typically for establishments with less than 5 employees.

**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)
20415	Flour mixes, and refrigerated and frozen doughs and batters	(NA)	(X)	4 244.3	(NA)	(X)	3 162.1
	Made chiefly from flour milled in the same establishment	(NA)	(X)	345.9	(NA)	(X)	340.5
20450	Made chiefly from purchased flour	(NA)	(X)	3 898.4	(NA)	(X)	2 821.6
	Pancake and waffle mixes .....1,000 sacks (cwt)---	(NA)			(NA)		
20415 11	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	5 493.5	231.9	(NA)	2 645.7	111.4
20450 11	Made chiefly from purchased flour .....1,000 sacks (cwt)---	11	2 444.3	65.8	(NA)	(D)	(D)
	Cake mixes, including gingerbread .....1,000 sacks (cwt)---	18	3 049.2	166.0	(NA)	(D)	(D)
20415 13	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	7 986.5	644.8	(NA)	3 831.5	294.5
20450 13	Made chiefly from purchased flour .....1,000 sacks (cwt)---	5	341.5	15.1	(NA)	(D)	(D)
	Biscuit mixes .....1,000 sacks (cwt)---	20	7 655.0	629.7	(NA)	(D)	(D)
20415 15	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	5 444.4	187.4	(NA)	1 443.6	61.5
20450 15	Made chiefly from purchased flour .....1,000 sacks (cwt)---	13	1 350.5	50.2	(NA)	(D)	(D)
	Pie crust mixes .....1,000 sacks (cwt)---	13	4 093.9	137.2	(NA)	(D)	(D)
20415 17	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	(D)	(D)	(NA)	231.4	16.2
20450 17	Made chiefly from purchased flour .....1,000 sacks (cwt)---	1	(D)	(D)	1	(D)	(D)
	Doughnuts and other sweet yeast goods mixes .....1,000 sacks (cwt)---	5	256.4	19.7	6	(D)	(D)
20415 19	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	(D)	(D)	(NA)	(D)	(D)
20450 19	Made chiefly from purchased flour .....1,000 sacks (cwt)---	1	(D)	(D)	3	(D)	(D)
	Bread and bread-type roll mixes .....1,000 sacks (cwt)---	21	**10 232.4	338.8	14	5 858.8	168.1
20415 21	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	*4 683.0	175.1	(NA)	826.5	28.2
20450 21	Made chiefly from purchased flour .....1,000 sacks (cwt)---	9	1 140.1	46.4	(NA)	(D)	(D)
	Other prepared flour mixes, including cookie mixes .....1,000 sacks (cwt)---	18	*3 522.9	128.7	(NA)	(D)	(D)
20415 25	Made chiefly from flour milled in the same establishment .....1,000 sacks (cwt)---	(NA)	*34 224.2	621.4	(NA)	4 853.8	328.0
20450 25	Made chiefly from purchased flour .....1,000 sacks (cwt)---	14	**8 126.6	160.4	(NA)	(D)	(D)
	Refrigerated biscuit dough .....mil lb---	32	28 097.5	461.1	(NA)	(D)	(D)
20415 81	Made chiefly from flour milled in the same establishment .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20450 81	Made chiefly from purchased flour .....mil lb---	4	(D)	(D)	4	(D)	(D)
	Refrigerated bread and bread-type roll dough, including dinner .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 85	Made chiefly from flour milled in the same establishment .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20450 85	Made chiefly from purchased flour .....mil lb---	2	(D)	(D)	2	(D)	(D)
	Refrigerated cookie dough .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 86	Made chiefly from flour milled in the same establishment .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20450 86	Made chiefly from purchased flour .....mil lb---	2	(D)	(D)	(NA)	(D)	(D)
	Refrigerated pasta dough .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 88	Made chiefly from flour milled in the same establishment .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20450 88	Made chiefly from purchased flour .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
	Other refrigerated doughs and batters, including pizza, coffeecake, pancakes, etc. ....mil lb---	(NA)	(S)	163.5	(NA)	(D)	(D)
20415 89	Made chiefly from flour milled in the same establishment .....mil lb---	3	(S)	1.3	(NA)	(D)	(D)
20450 89	Made chiefly from purchased flour .....mil lb---	9	336.2	162.3	(NA)	(D)	(D)
	Frozen bread and bread-type roll dough .....mil lb---	(NA)	(D)	(D)	(NA)	852.6	332.7
20415 91	Made chiefly from flour milled in the same establishment .....mil lb---	1	(D)	(D)	1	(D)	(D)
20450 91	Made chiefly from purchased flour .....mil lb---	28	*1 227.5	448.5	28	(D)	(D)
	Frozen cookie dough .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 92	Made chiefly from flour milled in the same establishment .....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20450 92	Made chiefly from purchased flour .....mil lb---	29	129.0	150.0	30	(D)	(D)
	Other frozen doughs and batters, including pizza, coffeecake, pancakes, etc. ....mil lb---	(NA)	(D)	(D)	(NA)	(D)	(D)
20415 95	Made chiefly from flour milled in the same establishment .....mil lb---	1	(D)	(D)	(NA)	(D)	(D)
20450 95	Made chiefly from purchased flour .....mil lb---	51	1 109.3	574.6	(NA)	(D)	(D)
20415 00	Flour mixes, and refrigerated and frozen doughs and batters, n.s.k.	(NA)	(X)	100.4	(NA)	(X)	91.7
20450 00	Made chiefly from flour milled in the same establishment	(NA)	(X)	(D)	(NA)	(X)	(D)
	Made chiefly from purchased flour	(NA)	(X)	82.2	(NA)	(X)	24.5

See footnotes at end of table.

**Table 6a-2. Selected Products Primary to More Than One Industry—Quantity and Value of Shipments by Industry: 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 appendices. 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)		
20450 02	Flour mixes, and refrigerated and frozen doughs and batters—Con. Flour mixes, and refrigerated and frozen doughs and batters, n.s.k.—Con. Made chiefly from purchased flour	(NA)	(X)	18.2	(NA)	(X)	87.2		

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>20411, WHEAT FLOUR, EXCEPT FLOUR MIXES</b>			<b>20415, FLOUR MIXES AND REFRIGERATED AND FROZEN DOUGHS AND BATTERS</b>		
United States .....	4 192.4	3 218.7	United States .....	345.9	340.5
California .....	301.6	178.1	Texas .....	39.4	(NA)
Florida .....	93.9	65.1	<b>20416, OTHER GRAIN MILL PRODUCTS</b>		
Georgia .....	54.2	40.8	United States .....	173.4	82.2
Illinois .....	229.0	171.9	Minnesota .....	52.5	36.4
Kansas .....	330.7	281.3	<b>20431, READY TO SERVE CEREAL BREAKFAST FOODS, EXCEPT INFANT CEREALS</b>		
Michigan .....	55.7	48.7	United States .....	7 269.6	(NA)
Minnesota .....	347.1	324.5	Illinois .....	805.3	(NA)
Missouri .....	381.5	225.7	Michigan .....	2 054.3	(NA)
Nebraska .....	70.1	83.7	<b>20432, OTHER CEREAL BREAKFAST FOODS</b>		
New York .....	508.5	313.0	United States .....	495.6	(NA)
North Carolina .....	120.8	78.7	California .....	3.4	(NA)
Ohio .....	207.8	141.4	Minnesota .....	124.8	(NA)
Oregon .....	53.1	43.2	<b>20461, CORN SWEETENERS</b>		
Tennessee .....	218.1	299.9	United States .....	2 911.0	2 182.5
Texas .....	150.3	135.0	Illinois .....	757.0	552.5
Utah .....	87.9	81.1	Iowa .....	936.4	729.9
<b>20412, WHEAT MILL PRODUCTS OTHER THAN FLOUR</b>			<b>20462, MANUFACTURED STARCH</b>		
United States .....	494.4	336.9	United States .....	1 305.5	774.3
California .....	38.4	23.3	Indiana .....	410.4	269.2
Florida .....	11.7	9.2	Iowa .....	373.3	195.4
Georgia .....	8.9	6.1	<b>20463, CORN OIL</b>		
Illinois .....	24.3	9.0	United States .....	801.6	613.1
Kansas .....	45.0	48.1	Illinois .....	583.9	460.8
Michigan .....	21.4	12.7	Iowa .....	88.0	78.9
Minnesota .....	39.8	26.6	<b>20464, WET PROCESS CORN BYPRODUCTS</b>		
Missouri .....	34.0	18.2	United States .....	1 363.5	845.8
New York .....	44.5	29.8	Illinois .....	380.8	256.2
North Carolina .....	14.2	10.8	Indiana .....	114.8	72.9
Ohio .....	23.2	14.7	Iowa .....	527.7	277.2
Oklahoma .....	11.5	6.9			
Oregon .....	8.9	6.1			
Tennessee .....	22.2	(NA)			
Texas .....	22.3	15.2			
Utah .....	14.2	(NA)			
<b>20413, CORN MILL PRODUCTS</b>					
United States .....	775.7	561.2			
Illinois .....	190.1	118.7			
Indiana .....	49.4	30.6			
New York .....	4.0	(NA)			
North Carolina .....	20.5	6.9			
Texas .....	118.3	36.8			

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>20473, DOG FOOD</b>			<b>20481, CHICKEN AND TURKEY FEED, SUPPLEMENTS, CONCENTRATES, AND PREMIXES—Con.</b>		
United States .....	3 899.8	3 074.6	United States .....	1 454.7	1 221.5
Alabama .....	136.7	91.8	Alabama .....	18.3	13.4
Arizona .....	15.9	(NA)	Arkansas .....	13.6	16.5
California .....	246.6	185.7	California .....	328.7	266.3
Colorado .....	24.5	(NA)	Colorado .....	7.7	2.2
Georgia .....	142.2	(NA)	Florida .....	70.0	51.3
Illinois .....	228.9	208.4	Georgia .....	55.8	40.4
Indiana .....	38.6	24.1	Illinois .....	58.7	19.0
Iowa .....	471.0	(NA)	Indiana .....	14.0	9.7
Kansas .....	472.0	(NA)	Iowa .....	7.6	6.7
Kentucky .....	4.6	(NA)	Kansas .....	12.1	8.8
Maryland .....	6.6	(NA)	Kentucky .....	35.8	53.2
Michigan .....	22.5	(NA)	Maine .....	16.7	(NA)
Minnesota .....	50.7	37.4	Maryland .....	8.2	12.6
Mississippi .....	42.9	106.5	Michigan .....	7.3	3.0
Missouri .....	191.6	117.8	Minnesota .....	19.9	20.2
Nebraska .....	199.8	(NA)	Missouri .....	56.8	49.9
New Jersey .....	42.3	(NA)	Nebraska .....	6.0	4.8
New Mexico .....	14.1	(NA)	New York .....	115.3	132.9
New York .....	428.6	196.9	North Carolina .....	32.8	36.6
North Carolina .....	22.8	(NA)	Ohio .....	33.8	11.5
Ohio .....	358.1	244.9	Oklahoma .....	11.5	15.1
Oklahoma .....	144.6	(NA)	Pennsylvania .....	59.3	50.3
Pennsylvania .....	244.7	318.6	South Dakota .....	2.5	(NA)
South Dakota .....	3.3	(NA)	Texas .....	121.8	53.4
Tennessee .....	48.1	44.4	Utah .....	2.5	(NA)
Texas .....	89.3	26.4	Vermont .....	45.8	38.1
Utah .....	28.1	(NA)	Virginia .....	24.8	29.7
Vermont .....	6.8	(NA)	Washington .....	72.5	38.9
Virginia .....	48.9	(NA)	Wisconsin .....	48.4	21.7
Washington .....	25.9	(NA)			
Wisconsin .....	94.1	(NA)			
<b>20474, CAT FOOD</b>			<b>20482, DAIRY CATTLE FEED, COMPLETE</b>		
United States .....	2 271.1	1 446.3	United States .....	1 454.7	1 221.5
Alabama .....	5.9	10.5	Alabama .....	18.3	13.4
Arizona .....	2.7	(NA)	Arkansas .....	13.6	16.5
California .....	271.3	111.7	California .....	328.7	266.3
Colorado .....	74.5	(NA)	Colorado .....	7.7	2.2
Georgia .....	61.0	(NA)	Florida .....	70.0	51.3
Illinois .....	50.9	(NA)	Georgia .....	55.8	40.4
Indiana .....	10.7	(NA)	Illinois .....	58.7	19.0
Iowa .....	310.2	246.5	Indiana .....	14.0	9.7
Kansas .....	84.4	(NA)	Iowa .....	7.6	6.7
Michigan .....	3.3	(NA)	Kansas .....	12.1	8.8
Minnesota .....	38.8	(NA)	Kentucky .....	35.8	53.2
Mississippi .....	40.2	(NA)	Maine .....	16.7	(NA)
Missouri .....	339.2	(NA)	Maryland .....	8.2	12.6
Nebraska .....	74.8	(NA)	Michigan .....	7.3	3.0
New Jersey .....	24.4	(NA)	Minnesota .....	19.9	20.2
New York .....	147.9	(NA)	Missouri .....	56.8	49.9
Ohio .....	181.5	(NA)	Nebraska .....	6.0	4.8
Oklahoma .....	50.2	(NA)	New York .....	115.3	132.9
Pennsylvania .....	191.8	(NA)	North Carolina .....	32.8	36.6
South Dakota .....	7.5	(NA)	Ohio .....	33.8	11.5
Tennessee .....	12.9	(NA)	Oklahoma .....	11.5	15.1
Texas .....	100.4	(NA)	Pennsylvania .....	59.3	50.3
Utah .....	4.0	(NA)	South Dakota .....	2.5	(NA)
Virginia .....	3.5	(NA)	Texas .....	121.8	53.4
Washington .....	9.5	(NA)	Utah .....	2.5	(NA)
Wisconsin .....	189.7	(NA)	Vermont .....	45.8	38.1
			Virginia .....	24.8	29.7
			Washington .....	72.5	38.9
			Wisconsin .....	48.4	21.7
<b>20481, CHICKEN AND TURKEY FEED, SUPPLEMENTS, CONCENTRATES, AND PREMIXES</b>			<b>20483, DAIRY CATTLE FEED SUPPLEMENTS, CONCENTRATES, AND PREMIXES</b>		
United States .....	4 890.3	3 378.5	United States .....	678.5	543.0
Alabama .....	556.6	217.3	California .....	77.8	54.1
Arkansas .....	779.0	420.0	Colorado .....	3.4	6.0
California .....	390.7	158.8	Florida .....	7.2	(NA)
Colorado .....	28.3	15.8	Georgia .....	10.2	10.2
Connecticut .....	37.7	(NA)	Illinois .....	42.7	66.7
Delaware .....	181.0	153.4	Indiana .....	32.6	34.8
Florida .....	80.9	74.5	Iowa .....	51.0	51.0
Georgia .....	541.6	398.7	Kansas .....	11.0	6.5
Illinois .....	12.9	13.6	Kentucky .....	12.6	7.5
Indiana .....	69.1	109.0	Maryland .....	3.3	2.5
Iowa .....	67.0	56.3	Michigan .....	23.9	9.4
Kansas .....	12.1	5.7	Minnesota .....	79.8	53.5
Kentucky .....	6.8	8.1	Missouri .....	16.7	8.3
Maryland .....	203.2	122.7	Nebraska .....	13.8	12.8
Michigan .....	22.4	16.5	New York .....	31.2	7.8
Minnesota .....	62.6	33.2	North Carolina .....	9.9	9.1
Mississippi .....	77.8	59.9	Ohio .....	31.9	33.2
Missouri .....	107.9	113.8	Oklahoma .....	2.6	(NA)
Nebraska .....	8.7	12.7	Pennsylvania .....	53.4	40.8
New York .....	11.5	15.2	South Dakota .....	4.3	3.9
			Tennessee .....	6.0	(NA)
			Texas .....	29.2	8.6
			Utah .....	3.0	(NA)
			Vermont .....	6.7	(NA)
			Virginia .....	9.8	4.3
			Washington .....	8.6	2.4
			Wisconsin .....	79.7	73.4

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>20484, SWINE FEED, COMPLETE</b>			<b>20487, BEEF CATTLE FEED SUPPLEMENTS, CONCENTRATES, AND PREMIXES</b>		
United States .....	541.9	416.3	United States .....	623.0	548.1
Alabama .....	4.0	10.2	California .....	7.9	2.7
California .....	10.0	5.2	Colorado .....	22.6	25.9
Colorado .....	3.9	(NA)	Florida .....	7.6	12.5
Florida .....	2.7	2.4	Georgia .....	8.3	5.5
Georgia .....	21.2	19.2	Illinois .....	42.2	38.4
Illinois .....	53.1	34.3	Indiana .....	16.1	68.5
Indiana .....	38.1	25.2	Iowa .....	70.1	61.5
Iowa .....	77.3	80.2	Kansas .....	80.7	60.2
Kansas .....	6.8	4.7	Kentucky .....	6.2	3.2
Kentucky .....	7.3	7.3	Michigan .....	2.4	(NA)
Michigan .....	3.5	2.3	Minnesota .....	21.4	27.8
Minnesota .....	13.4	18.6	Missouri .....	21.0	14.8
Missouri .....	26.8	18.9	Montana .....	9.5	8.0
Nebraska .....	33.2	29.7	Nebraska .....	68.3	69.4
New York .....	2.1	(NA)	North Carolina .....	16.4	2.0
North Carolina .....	52.9	35.7	Ohio .....	11.8	4.2
Ohio .....	14.0	6.5	Oklahoma .....	19.4	(NA)
Oklahoma .....	19.0	6.5	Pennsylvania .....	4.3	(NA)
Oregon .....	2.8	2.8	South Dakota .....	25.4	27.8
Pennsylvania .....	22.3	29.9	Tennessee .....	6.4	3.2
South Carolina .....	5.7	5.9	Texas .....	92.8	62.2
South Dakota .....	5.7	8.1	Wisconsin .....	14.7	6.8
Texas .....	13.1	9.5	<b>20488, OTHER POULTRY AND LIVESTOCK FEED</b>		
Washington .....	3.1	2.8	United States .....	511.9	425.6
Wisconsin .....	21.0	13.3	Alabama .....	6.8	18.1
<b>20485, SWINE FEED SUPPLEMENTS, CONCENTRATES, AND PREMIXES</b>			Arkansas .....	5.9	5.5
United States .....	1 181.4	1 265.3	California .....	26.5	39.2
Colorado .....	2.1	(NA)	Colorado .....	9.6	6.9
Georgia .....	22.3	26.2	Florida .....	23.3	9.5
Illinois .....	177.6	241.2	Georgia .....	14.8	15.2
Indiana .....	81.8	139.0	Illinois .....	81.6	11.1
Iowa .....	411.7	371.3	Indiana .....	24.0	9.7
Kansas .....	24.0	33.4	Iowa .....	22.2	21.2
Kentucky .....	15.8	13.1	Kansas .....	6.5	3.4
Michigan .....	15.3	7.5	Kentucky .....	4.8	6.8
Minnesota .....	71.0	70.7	Louisiana .....	3.9	7.5
Missouri .....	57.0	44.7	Michigan .....	3.8	(NA)
Nebraska .....	114.1	152.1	Minnesota .....	5.1	3.5
North Carolina .....	44.9	44.9	Mississippi .....	4.2	2.2
Ohio .....	35.2	14.7	Missouri .....	7.7	31.7
Pennsylvania .....	7.0	6.0	Nebraska .....	12.8	5.3
South Dakota .....	35.8	23.7	New York .....	22.4	27.2
Tennessee .....	7.7	(NA)	North Carolina .....	12.1	28.8
Texas .....	4.3	12.5	Ohio .....	17.9	5.8
Wisconsin .....	20.0	18.9	Oklahoma .....	16.6	18.0
<b>20486, BEEF CATTLE FEED, COMPLETE</b>			Oregon .....	3.9	(NA)
United States .....	524.2	431.2	Pennsylvania .....	18.3	12.3
Alabama .....	5.1	6.2	South Dakota .....	3.1	2.4
Arkansas .....	15.8	14.7	Tennessee .....	10.0	12.2
California .....	11.0	10.9	Texas .....	53.6	47.7
Colorado .....	12.6	(NA)	Utah .....	3.8	(NA)
Florida .....	19.6	12.3	Virginia .....	7.4	11.9
Georgia .....	8.4	5.8	Washington .....	3.5	12.0
Indiana .....	5.8	(NA)	Wisconsin .....	48.1	12.8
Iowa .....	11.4	15.3	<b>20489, OTHER PREPARED ANIMAL FEEDS, INCLUDING FEEDING MATERIALS AND ADJUNCTS</b>		
Kansas .....	102.0	46.8	United States .....	465.4	468.1
Kentucky .....	7.8	4.8	Alabama .....	10.1	5.2
Louisiana .....	6.7	7.4	Arkansas .....	8.4	(NA)
Minnesota .....	11.9	(NA)	California .....	14.9	26.8
Mississippi .....	5.4	4.3	Colorado .....	9.7	(NA)
Missouri .....	23.7	21.4	Florida .....	9.2	2.1
Montana .....	3.6	(NA)	Georgia .....	25.4	22.9
Nebraska .....	19.3	14.2	Illinois .....	59.2	(NA)
North Carolina .....	2.5	6.2	Indiana .....	10.5	4.7
Ohio .....	4.8	(NA)	Iowa .....	21.1	22.4
Oklahoma .....	45.7	41.9	Kansas .....	17.9	18.4
Oregon .....	9.0	(NA)	Kentucky .....	3.1	2.0
South Dakota .....	3.8	5.0	Michigan .....	3.3	(NA)
Texas .....	104.8	95.1	Minnesota .....	15.7	18.8
Virginia .....	4.4	3.5	Missouri .....	13.2	8.2
Washington .....	4.3	3.2	Nebraska .....	20.7	16.0
Wisconsin .....	2.2	(NA)	North Carolina .....	17.8	7.4
See footnotes at end of table.			Ohio .....	24.5	18.5
<b>20D-28 GRAIN MILL PRODUCTS</b>			Oklahoma .....	6.3	4.5
			Pennsylvania .....	21.9	8.8
			South Dakota .....	3.6	(NA)
			<b>MANUFACTURES—INDUSTRY SERIES</b>		

**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>20489, OTHER PREPARED ANIMAL FEEDS, INCLUDING FEEDING MATERIALS AND ADJUNCTS—Con.</b>			<b>2048A, SPECIALTY FEEDS—Con.</b>		
Texas.....	40.2	27.0	Illinois.....	15.6	14.6
Utah.....	14.6	(NA)	Iowa.....	5.1	3.5
Virginia.....	2.1	(NA)	Kansas.....	10.4	3.1
Washington.....	11.7	2.3	Kentucky.....	2.5	(NA)
Wisconsin.....	25.7	36.7	Michigan.....	6.5	2.7
			Minnesota.....	36.3	4.7
<b>2048A, SPECIALTY FEEDS</b>			Mississippi.....	70.6	(NA)
United States.....	747.4	537.6	Missouri.....	6.6	6.1
Alabama.....	7.8	3.4	Nebraska.....	16.6	27.3
Arkansas.....	17.4	(NA)	New York.....	20.3	12.9
California.....	48.0	52.5	North Carolina.....	5.7	2.7
Colorado.....	18.0	4.2	Ohio.....	26.9	15.9
Florida.....	4.0	2.7	Oklahoma.....	4.7	6.2
Georgia.....	5.3	3.4	Pennsylvania.....	32.8	31.7
			Tennessee.....	3.0	3.2
			Texas.....	64.3	25.0
			Washington.....	11.3	22.2

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
2041-20411	Flour and other grain mill products.....	6 194.8	5 215.9	5 533.8	5 649.0	4 869.4	4 690.1	4 871.6	3 678.6
20412	Wheat flour, except flour mixes.....	4 192.4	3 242.3	3 591.8	3 734.7	3 202.9	3 218.7	3 102.3	2 208.9
20413	Wheat mill products other than flour.....	494.4	450.8	486.5	570.7	429.8	339.9	478.5	455.4
20415	Corn mill products.....	775.7	891.2	848.3	817.0	512.3	561.2	553.8	413.3
20416	Flour mixes and refrigerated and frozen doughs and batters.....	345.9	489.6	498.3	427.2	428.3	340.5	382.4	287.2
20410	Other grain mill products.....	173.4	150.1	124.0	127.9	135.8	82.2	165.6	98.3
20410	Flour and other grain mill products, n.s.k.....	213.0	191.8	184.9	171.6	160.4	150.5	188.9	215.5
2043-20431	Cereal breakfast foods.....	7 795.4	7 007.5	6 678.9	6 382.6	5 666.9	5 081.1	3 111.5	1 832.9
20432	Ready to serve cereal breakfast foods, except infant cereals.....	7 289.8	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
20430	Other cereal breakfast foods.....	495.6	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
20430	Cereal breakfast foods, n.s.k.....	30.2	(NA)	(NA)	(NA)	(NA)	15.9	(NA)	(NA)
2044-20440	Rice milling.....	1 617.9	1 705.3	1 798.8	1 731.9	1 611.9	1 257.5	1 797.0	(NA)
20440	Milled rice and byproducts.....	1 617.9	1 705.3	1 798.8	1 731.9	1 611.9	1 257.5	1 797.0	(NA)
2045-20450	Prepared flour mixes and doughs.....	3 898.4	3 357.9	3 189.7	3 036.1	2 938.6	2 821.6	1 691.8	(NA)
20450	Flour mixes and refrigerated and frozen doughs and batters.....	3 898.4	3 357.9	3 189.7	3 036.1	2 938.6	2 821.6	1 691.8	(NA)
2046-20461	Wet corn milling.....	6 415.5	6 482.8	6 284.2	5 846.1	4 996.8	4 446.2	3 105.7	1 946.1
20462	Corn sweeteners.....	2 911.0	3 038.4	2 996.8	2 777.6	2 185.2	2 182.5	1 610.4	(NA)
20463	Manufactured starch.....	1 305.5	1 310.3	1 211.8	1 120.9	970.4	774.3	655.1	(NA)
20464	Corn oil.....	801.8	911.2	938.9	775.2	775.0	613.1	234.9	1 946.1
20460	Wet process corn byproducts.....	1 383.5	1 198.8	1 100.3	1 127.7	1 043.0	845.8	577.7	(NA)
20460	Wet corn milling, n.s.k.....	34.0	23.0	36.4	44.7	23.1	30.5	27.6	(NA)
2047-20473	Dog and cat food.....	6 316.2	6 083.8	5 985.5	5 715.8	5 342.4	4 710.2	4 080.8	(NA)
20474	Dog food.....	3 899.8	3 951.2	3 839.3	3 602.9	3 509.3	3 074.6	2 655.4	(NA)
20470	Cat food.....	2 271.1	1 888.8	1 718.7	1 691.4	1 620.8	1 446.3	1 272.9	2 895.2
20470	Dog and cat food, n.s.k.....	145.3	243.8	427.4	421.5	212.2	189.2	152.5	(NA)
2048-20481	Prepared feeds, n.e.c.....	13 285.6	12 643.4	12 457.3	12 555.5	12 067.4	10 712.9	10 847.2	(NA)
20482	Chicken and turkey feed, supplements, concentrates, and premixes.....	4 890.3	4 851.4	4 509.2	4 479.7	3 714.3	3 378.5	3 642.1	2 758.6
20483	Dairy cattle feed, complete.....	1 454.7	1 560.0	1 585.3	1 452.6	1 341.0	1 221.5	1 473.9	1 145.6
20484	Dairy cattle feed supplements, concentrates, and premixes.....	678.5	713.1	781.2	722.7	620.2	543.0	544.3	308.5
20485	Swine feed, complete.....	541.9	652.8	583.4	605.7	544.2	418.3	585.9	575.8
20485	Swine feed supplements, concentrates, and premixes.....	1 181.4	1 200.1	1 183.5	1 238.2	1 517.1	1 265.6	1 113.7	892.3
20486	Beef cattle feed, complete.....	524.2	593.2	577.1	525.5	466.1	431.2	511.4	387.1
20487	Beef cattle feed supplements, concentrates, and premixes.....	623.0	558.9	615.2	594.5	618.8	548.1	607.7	603.8
20489	Other poultry and livestock feed.....	511.9	779.7	742.9	662.6	560.5	425.6	400.6	337.9
2048A	Other prepared animal feeds, including feeding materials and adjuncts.....	465.4	382.6	368.8	477.2	521.3	468.1	361.2	338.0
20480	Specialty feeds.....	747.4	532.3	564.1	560.1	636.4	537.8	358.9	288.1
20480	Prepared feeds, n.e.c., n.s.k.....	1 666.8	818.4	1 006.5	1 238.8	1 527.4	1 477.1	1 247.4	(NA)

<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 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS</b>					
Materials, ingredients, containers, and supplies -----		(X)	4 323.3	(X)	3 332.7
Grain:					
011111	Wheat ----- mil bushels	875.9	3 177.8	*744.9	2 343.9
011521	Corn ----- mil bushels	133.9	287.7	**100.1	185.6
011913	Barley ----- mil bushels	(S)	5.8	**	1.8
011931	Oats ----- mil bushels	32.6	58.0	**16.6	27.3
011990	Other ----- mil bushels	**12.4	43.8	(NA)	(?)
204110	Wheat flour ----- 1,000 cwt	23 336.2	148.9	**33 861.6	282.2
206011	Sugar, cane and beet (in terms of sugar solids) ----- 1,000 s tons	*97.6	30.6	(S)	25.0
207003	Fats and oils ----- mil lb	(S)	39.8	**105.8	22.2
267101	Packaging paper and plastics film, coated and laminated -----	(X)	38.1	(X)	(?)
267301	Bags; plastics, foil, and coated paper -----	(X)	14.2	(X)	(?)
267401	Bags; uncoated paper and multiwall -----	(X)	48.2	(X)	(?)
239303	Bags, textile (burlap, cotton, polypropylene, etc.) -----	(X)	3.7	(X)	15.9
265001	Paperboard containers, boxes, and corrugated paperboard -----	(X)	16.5	(X)	25.1
970099	All other materials and components, parts, containers, and supplies -----	(X)	225.2	(X)	*222.0
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> -----	(X)	185.1	(X)	181.9
<b>INDUSTRY 2043, CEREAL BREAKFAST FOODS</b>					
Materials, ingredients, containers, and supplies -----		(X)	1 968.5	(X)	1 423.7
Grain:					
011111	Wheat ----- mil bushels	18.5	76.3	17.8	68.3
011931	Oats ----- mil bushels	(S)	78.2	30.4	46.7
011521	Corn ----- mil bushels	(D)	(D)	(NA)	(?)
011913	Barley ----- mil bushels	18.1	2.4	(NA)	(?)
011241	Rice, rough ----- mil bushels	297.3	54.5	282.5	30.6
011090	Other grains ----- mil bushels	(S)	1.2	(NA)	(?)
204139	Corn grits ----- mil bushels	523.7	51.4	(NA)	(?)
204132	Corn meal and flakes ----- 1,000 cwt	(D)	(D)	(NA)	(?)
204110	Wheat flour ----- 1,000 cwt	(S)	33.5	3 589.7	31.0
204160	Flour, other than wheat ----- 1,000 cwt	(S)	60.7	(D)	47.8
204150	Prepared flour mixes ----- 1,000 cwt	(D)	(D)	4 069.2	47.8
Sugar, cane and beet, in terms of sugar solids:					
206012	White ----- 1,000 s tons	511.5	238.1	408.2	198.7
206090	Brown ----- 1,000 s tons	*19.8	11.8		
207003	Fats and oils ----- mil lb	133.6	38.8	86.2	23.0
203416	Raisins ----- 1,000 cwt	787.8	70.8		
203490	Dried fruits except raisins ----- 1,000 cwt	133.1	28.1	1 709.3	163.1
206890	Nut meats, dried or dehydrated ----- 1,000 cwt	63.6	7.7		
017390	Nuts and nut meats, raw ----- 1,000 cwt	234.5	38.9		
267101	Packaging paper and plastics film, coated and laminated -----	(X)	103.2	(X)	(?)
267301	Bags; plastics, foil, and coated paper -----	(X)	59.6	(X)	(?)
267401	Bags; uncoated paper and multiwall -----	(X)	(D)	(X)	(?)
265001	Paperboard containers, boxes, and corrugated paperboard -----	(X)	451.0	(X)	313.6
970099	All other materials and components, parts, containers, and supplies -----	(X)	502.8	(X)	*498.5
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> -----	(X)	6.5	(X)	2.4
<b>INDUSTRY 2044, RICE MILLING</b>					
Materials, ingredients, containers, and supplies -----		(X)	1 117.7	(X)	783.8
Grain:					
011241	Rice, rough ----- mil lb	13 455.5	795.8	*11 567.0	725.4
011521	Corn ----- mil bushels	-	-	(NA)	(?)
011961	Sorghum ----- mil bushels	-	-	(NA)	(?)
281993	Calcium carbonate -----	(X)	(D)	(X)	(?)
288968	Enzymes -----	(X)	-	(X)	(?)
288968	Acids, organic -----	(X)	-	(X)	(?)
239303	Bags, textile (burlap, cotton, polypropylene, etc.) -----	(X)	22.0	(X)	(?)
267301	Bags; plastics, foil, and coated paper -----	(X)	2.8	(X)	(?)
267401	Bags; uncoated paper and multiwall -----	(X)	4.3	(X)	(?)
267101	Packaging paper and plastics film, coated and laminated -----	(X)	14.5	(X)	(?)
970099	All other materials and components, parts, containers, and supplies -----	(X)	(D)	(X)	545.5
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> -----	(X)	19.7	(X)	*12.9
<b>INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS</b>					
Materials, ingredients, containers, and supplies -----		(X)	1 858.5	(X)	1 208.3
Grain:					
011111	Wheat ----- mil bushels	(D)	(D)	(NA)	(?)
011931	Oats ----- mil bushels	(S)	.5	(NA)	(?)
011521	Corn ----- mil bushels	-	-	(NA)	(?)
011913	Barley ----- mil bushels	-	-	(NA)	(?)
011241	Rice, rough ----- mil lb	-	-	(NA)	(?)
011090	Other grains ----- mil bushels	(D)	(D)	(NA)	(?)
204139	Corn grits ----- mil bushels	(D)	(D)	(NA)	(?)
204132	Corn meal and flakes ----- 1,000 cwt	13.8	1.3	(NA)	(?)
204110	Wheat flour ----- 1,000 cwt	20 397.8	465.1	19 972.0	195.3
204160	Flour, other than wheat ----- 1,000 cwt	2 400.5	245.4	**384.1	37.1
204150	Prepared flour mixes ----- 1,000 cwt	1 400.6	11.8		

See footnotes at end of table.

**20D-30 GRAIN MILL PRODUCTS**

**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 2046, PREPARED FLOUR MIXES AND DOUGHS—Con.</b>					
Sugar, cane and beet, in terms of sugar solids:					
206012	White.....1,000 s tons.....	263.0	130.2	198.2	101.0
206090	Brown.....1,000 s tons.....	8.0	2.6		
207003	Fats and oils.....mil lb.....	315.6	103.9	181.4	47.4
203418	Raisins.....1,000 cwt.....	(S)	4.3	(NA)	(S)
203490	Dried fruits except raisins.....1,000 cwt.....	(D)	(D)	(NA)	(S)
206890	Nut meats, dried or dehydrated.....1,000 cwt.....	(D)	(D)	(NA)	(S)
017390	Nuts and nut meats, raw.....1,000 cwt.....	14.3	2.5	(NA)	(S)
267101	Packaging paper and plastics film, coated and laminated.....	⊗	44.0	⊗	(S)
267301	Bags, plastics, foil, and coated paper.....	⊗	5.9	⊗	(S)
267401	Bags, uncoated paper and multwall.....	⊗	12.5	⊗	(S)
265001	Paperboard containers, boxes, and corrugated paperboard.....	⊗	179.4	⊗	88.2
970099	All other materials and components, parts, containers, and supplies.....	⊗	449.7	⊗	*567.2
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> .....	⊗	142.2	⊗	172.1
<b>INDUSTRY 2046, WET CORN MILLING</b>					
Materials, ingredients, containers, and supplies.....		(X)	3 184.0	(X)	2 169.5
Grain:					
011241	Rice, rough.....mil lb.....	(D)	(D)	(NA)	(D)
011521	Com.....mil bushels.....	1 303.1	2 587.7	796.7	1 435.9
011981	Sorghum.....mil bushels.....	(D)	(D)	(NA)	(D)
281893	Calcium carbonate.....	(D)	(D)	(D)	(D)
288988	Enzymes.....	(D)	60.9	(D)	(D)
288988	Acids, organic.....	(D)	42.1	(D)	(D)
239303	Bags, textile (burlap, cotton, polypropylene, etc.).....	(D)	(D)	(D)	(D)
267301	Bags, plastics, foil, and coated paper.....	(D)	(D)	(D)	(D)
267401	Bags, uncoated paper and multwall.....	(D)	24.0	(D)	(D)
267101	Packaging paper and plastics film, coated and laminated.....	(D)	4.2	(D)	(D)
970099	All other materials and components, parts, containers, and supplies.....	⊗	404.5	⊗	771.0
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> .....	⊗	10.6	⊗	16.6
<b>INDUSTRY 2047, DOG AND CAT FOOD</b>					
Materials, ingredients, containers, and supplies.....		(X)	2 538.6	(X)	1 810.4
Grain:					
011101	Wheat.....1,000 s tons.....	238.3	27.2	*402.5	37.5
011503	Field corn, whole grain.....mil lb.....	(S)	188.7	1 487.4	107.3
011901	Oats.....1,000 s tons.....	(D)	(D)	*34.0	5.0
011904	Barley.....1,000 s tons.....	(D)	4.7	(S)	2.5
011905	Sorghum.....1,000 s tons.....	(S)	5.4	(S)	8.7
204110	Wheat flour.....1,000 cwt.....	3 375.5	27.4	2 878.5	20.9
Millfeed and screenings:					
204122	Wheat.....1,000 s tons.....	*380.4	34.8	248.1	22.2
207522	Soybean.....1,000 s tons.....	37.7	7.7	58.9	10.2
204181	Other.....1,000 s tons.....	(D)	(D)	(S)	3.0
204133	Hominy feed and meal.....1,000 s tons.....	28.1	3.9	(S)	3.9
204135	Corn meal.....1,000 cwt.....	*594.7	7.3	(S)	11.5
204607	Corn gluten feed and meal.....1,000 s tons.....	*334.3	80.5	305.4	61.1
204893	Alfalfa meal, excluding alfalfa hay.....1,000 s tons.....	10.5	1.8	22.6	2.7
206011	Sugar, cane and beet (in terms of sugar solids).....1,000 s tons.....	(S)	5.8	**14.5	2.2
206013	Molasses.....1,000 s tons.....	2.6	3	9.3	1.9
207441	Cottonseed cake and meal.....1,000 s tons.....	(D)	(D)	70.1	15.4
207004	Fats and oils.....1,000 s tons.....	*272.1	82.8	188.7	58.2
207721	Meat meal and tankage.....1,000 s tons.....	*941.3	194.8	634.4	143.2
207722	Poultry feather and byproducts meal.....1,000 s tons.....	320.0	118.4	354.9	74.9
207736	Fish meal and solubles (dry weight equivalent).....1,000 s tons.....	118.8	50.6	109.8	38.9
208249	Brewers' and distillers' grains.....1,000 s tons.....	111.7	21.5	70.7	9.4
207521	Soybean cake and meal.....1,000 s tons.....	(S)	150.3	451.4	102.0
Minerals, except trace minerals:					
281890	Calcium.....1,000 s tons.....	(S)	4.8	(S)	2.0
281896	Phosphorus, elemental (technical).....1,000 s tons.....	**15.2	11.9	(S)	5.9
289912	Salt.....1,000 s tons.....	49.0	4.8	59.2	4.0
281899	Other minerals except trace minerals.....1,000 s tons.....	**20.2	8.7	(S)	8.7
Microingredients:					
283311	Vitamins.....	⊗	24.6	⊗	15.2
283312	Drugs and antibiotics.....	⊗	4	⊗	4
283304	Other microingredients including trace minerals.....	⊗	47.8	⊗	30.2
265001	Paperboard containers, boxes, and corrugated paperboard.....	⊗	117.5	⊗	103.2
267101	Packaging paper and plastics film, coated and laminated.....	⊗	36.3	⊗	(S)
239305	Bags, textile (burlap, cotton, polypropylene, etc.).....	⊗	(D)	⊗	33.5
267301	Bags, plastics, foil, and coated paper.....	⊗	88.6	⊗	(S)
267401	Bags, uncoated paper and multwall.....	⊗	90.8	⊗	(S)
267101	Metal cans, can lids, and ends.....	⊗	291.8	⊗	(S)
970099	All other materials and components, parts, containers, and supplies.....	⊗	680.0	⊗	*748.5
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> .....	⊗	122.0	⊗	117.2

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 2048, PREPARED FEEDS, N.E.C.</b>				
	Materials, ingredients, containers, and supplies -----	(X)	10 434.5	(X)	8 008.2
	Grain:				
011101	Wheat ----- 1,000 s tons..	835.4	74.6	*1 412.4	83.8
011503	Field corn, whole grain ----- mil lb..	(S)	2 147.6	16 232.5	1 102.0
011901	Oats ----- 1,000 s tons..	573.6	72.1	*629.6	65.6
011904	Barley ----- 1,000 s tons..	*707.5	79.4	(D)	(D)
011905	Sorghum ----- 1,000 s tons..	1 075.5	103.0	*2 213.3	164.4
204110	Wheat flour ----- 1,000 cw..	*8 555.5	48.2	(D)	(D)
	Millfeed and screenings:				
204122	Wheat ----- 1,000 s tons..	3 326.2	337.0	2 694.2	186.2
207522	Soybean ----- 1,000 s tons..	*1 210.1	170.6	788.2	52.9
204161	Other ----- 1,000 s tons..	**2 254.0	195.1	1 261.1	69.5
204133	Hominy feed and meal ----- 1,000 s tons..	*134.6	14.5	(D)	(D)
204135	Corn meal ----- 1,000 cw..	(D)	(D)	(D)	(D)
204607	Corn gluten feed and meal ----- 1,000 s tons..	(D)	(D)	351.4	83.1
204893	Alfalfa meal, excluding alfalfa hay ----- 1,000 s tons..	*298.9	36.4	(D)	(D)
206011	Sugar, cane and beet (in terms of sugar solids) ----- 1,000 s tons..	*19.6	7.7	(S)	11.0
206013	Molasses ----- 1,000 s tons..	(S)	75.3	*1 540.6	70.1
207441	Cottonseed cake and meal ----- 1,000 s tons..	1 068.7	129.6	(D)	(D)
207004	Fats and oils ----- 1,000 s tons..	1 106.7	291.8	646.3	172.1
207721	Meat meal and tankage ----- 1,000 s tons..	1 307.2	308.0	(D)	(D)
207722	Poultry feather and byproducts meal ----- 1,000 s tons..	754.5	179.2	447.5	93.2
207736	Fish meal and solubles (dry weight equivalent) ----- 1,000 s tons..	315.6	106.3	288.1	97.6
208249	Brewers' and distillers' grains ----- 1,000 s tons..	501.3	70.2	*441.6	52.7
207521	Soybean cake and meal ----- 1,000 s tons..	8 751.6	1 644.7	(D)	(D)
	Minerals, except trace minerals:				
261990	Calcium ----- 1,000 s tons..	(S)	59.8	(S)	39.6
261996	Phosphorus, elemental (technical) ----- 1,000 s tons..	689.9	161.8	601.0	116.2
269912	Salt ----- 1,000 s tons..	(S)	26.3	483.6	17.3
261999	Other minerals, except trace minerals ----- 1,000 s tons..	(S)	177.2	288.4	51.8
	Microingredients:				
283311	Vitamins -----	(X)	273.7	(X)	162.4
283312	Drugs and antibiotics -----	(X)	331.8	(X)	248.5
283304	Other microingredients including trace minerals -----	(X)	285.1	(X)	226.0
265001	Paperboard containers, boxes, and corrugated paperboard -----	(X)	8.1	(X)	5.7
267101	Packaging paper and plastics film, coated and laminated -----	(X)	7.9	(X)	(NA)
239305	Bags, textile (burlap, cotton, polypropylene, etc.) -----	(X)	8.1	(X)	18.3
267301	Bags, plastics, foil, and coated paper -----	(X)	15.5	(X)	(NA)
267401	Bags, uncoated paper and multwall -----	(X)	79.1	(X)	(NA)
341101	Metal cans, can lids, and ends -----	(X)	4.0	(X)	(NA)
970099	All other materials and components, parts, containers, and supplies -----	(X)	662.9	(X)	(NA)
971000	Materials, ingredients, containers, and supplies, n.s.k. <sup>3</sup> -----	(X)	2 108.7	(X)	*1 981.7

<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>For 1987, data are included with material code 970099.

<sup>3</sup>Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

<sup>4</sup>For 1987, data are included with material code 970099.

<sup>5</sup>For 1987, data are included with material code 970099.

<sup>6</sup>For 1987, data are included with material code 970099.

<sup>7</sup>For 1987, data are included with material code 970099.

<sup>8</sup>For 1987, data are included with material code 970099.

## 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 imputed 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
2011B 17	2011B 99	20382 11	20382 23	20450 21	20450 67	20630 09	20630 07
2011B 59	2011B 99	20382 13	20382 23	20450 25	20450 72	20630 12	20630 07
		20382 15	20382 23	20450 25	20450 74	20630 35	20630 89
20137	20135	20382 19	20382 23	20450 86	20450 87	20630 76	20630 75
20137 41	20135 13	20382 21	20382 26	20450 88	20450 87	20630 76	20630 81
20137 41	20135 17	20382 23	20382 26	20450 89	20450 87	20630 91	20630 89
		20382 27	20382 53	20450 92	20450 93		
		20382 38	20382 53	20450 95	20450 93		
20138B 17	20138B 19	20382 39	20382 53			20752 97	20752 32
20138B 18	20138B 19	20382 43	20382 51			20752 97	20752 98
		20382 45	20382 51	20481 18	20481 17		
		20382 43	20382 51	20481 18	20482 49	20791 83	20791 81
		20382 47	20382 51	20481 19	20481 19	20791 85	20791 81
20223 01	20223 00	20382 49	20382 51	20481 23	20481 19		
20223 02	20223 00	20382 49	20382 53	20481 25	20481 31		
		20382 49	20382 53	20481 29	20481 19	20824 11	20824 00
		20382 49	20382 57	20481 29	20481 34		
				20481 29	20481 37	20840 10	20840 00
20224 11	20224 21					20851 15	20851 13
20224 13	20224 21					20851 15	20851 19
		20415 11	20415 51				
		20415 11	20415 52	20482 11	20482 41		
20238 01	20238 11	20415 13	20415 53	20482 11	20482 47	20853 65	20853 63
20238 03	20238 11	20415 13	20415 53	20482 13	20482 41	20853 85	20853 81
20238 05	20238 11	20415 15	20415 54	20482 13	20482 41		
20238 07	20238 11	20415 15	20415 56	20482 13	20482 47		
20238 19	20238 11	20415 15	20415 57	20482 15	20482 43	20864 00	20864 10
		20415 17	20415 80	20482 15	20482 47		
		20415 19	20415 83	20482 17	20482 43		
		20415 21	20415 86	20482 17	20482 47	20922 15	20922 21
		20415 21	20415 86			20922 17	20922 21
20321 00	20321 11	20415 21	20415 86			20922 18	20922 22
20321 00	20321 21	20415 25	20415 72			20922 19	20922 22
20321 00	20321 31	20415 25	20415 74				
20321 00	20321 51	20415 25	20415 74	20489 41	20489 00		
20321 00	20321 71	20415 88	20415 87			20923 21	20923 24
20321 00	20321 98	20415 88	20415 87			20923 21	20923 31
		20415 89	20415 87			20923 21	20923 33
		20415 92	20415 87			20923 23	20923 25
		20415 95	20415 93	2048A 12	2048A 13	20923 23	20923 35
			20415 93	2048A 19	2048A 13	20923 26	20923 31
20323 71	20323 73					20923 27	20923 33
20323 71	20323 74					20923 29	20923 35
		20418 13	20418 11	20511 21	20511 11		
		20418 13	20418 23	20511 22	20511 11	20925 27	20925 31
20324 63	20324 61			20511 27	20511 13	20925 28	20925 31
20324 63	20324 62			20511 29	20511 13	20925 29	20925 35
				20511 31	20511 15	20925 30	20925 32
		20431	20430	20511 33	20511 15		
20331 59	20331 18	20431 01	20430 11	20511 35	20511 17	20952 00	20952 11
20331 59	20331 31	20431 03	20430 11	20511 37	20511 17	20952 00	20952 14
20331 59	20331 97	20431 05	20430 12	20511 41	20511 28	20952 00	20952 17
		20431 07	20430 12	20511 42	20511 28	20952 00	20952 19
		20431 09	20430 15				
20332 98	20332 58	20431 11	20430 15				
20332 98	20332 73	20431 13	20430 17			20980 01	20980 21
20332 98	20332 99	20431 16	20430 17	20512 30	20512 33	20980 02	20980 21
		20431 18	20430 17	20512 31	20512 33	20980 03	20980 21
		20431 18	20430 21	20512 43	20512 35	20980 04	20980 31
		20431 19	20430 21	20512 44	20512 35	20980 05	20980 31
20336 67	20336 61			20512 50	20512 36	20980 06	20980 31
20336 67	20336 63			20512 51	20512 36		
20336 67	20336 65	20432	20430	20512 80	20512 37	20999 43	20999 41
		20432 01	20430 23	20512 81	20512 37	20999 45	20999 41
		20432 03	20430 63	20512 81	20512 37	20999 58	20999 98
20338 12	20338 15	20432 05	20430 55	20512 70	20512 39	20999 59	20999 98
20338 13	20338 15	20432 07	20430 57	20512 71	20512 39		
		20432 09	20430 61	20512 80	20512 40		
				20512 81	20512 40	2099A	20997
20343 25	20343 18			20512 90	20512 42	2099A 01	20997 81
20343 25	20343 23			20512 91	20512 42	2099A 02	20997 81
20343 32	20343 29	20440 93	20440 99			2099A 03	20997 81
20343 32	20343 31	20440 98	20440 99			2099A 04	20997 85
20343 39	20343 38					2099A 05	20997 85
20343 39	20343 41					2099A 06	20997 85
				20522 16	20522 19		
		20450 11	20450 51	20522 17	20522 19		
20352 21	20352 34	20450 11	20450 52	20522 18	20522 19	2099B	20997
20352 33	20352 34	20450 13	20450 53	20522 20	20522 19	2099B 01	20997 13
20352 35	20352 34	20450 13	20450 53			2099B 03	20997 21
20352 39	20352 34	20450 13	20450 54			2099B 05	20997 31
		20450 15	20450 56			2099B 07	20997 41
		20450 15	20450 57			2099B 09	20997 51
		20450 17	20450 60	20530 20	20530 13	2099B 11	20997 61
		20450 19	20450 63	20530 25	20530 13	2099B 13	20997 71
20372 63	20372 98	20450 19	20450 63	20530 40	20530 19	2099B 13	20997 71
20372 69	20372 98	20450 21	20450 66	20530 50	20530 19	2099B 19	20997 98

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

1987	1992	1987	1992	1987	1992	1987	1992
2011B 99	2011B 17	20382 23	20382 11	20450 86	20450 21	20630 07	20630 09
2011B 99	2011B 59	20382 23	20382 13	20450 67	20450 21	20630 07	20630 12
		20382 23	20382 15	20450 72	20450 25	20630 75	20630 76
20135	20137	20382 23	20382 19	20450 74	20450 25	20630 81	20630 76
20135 13	20137 41	20382 26	20382 21	20450 87	20450 88	20630 89	20630 35
20135 17	20137 41	20382 28	20382 23	20450 87	20450 88	20630 89	20630 91
		20382 28	20382 23	20450 87	20450 88	20630 89	20630 91
		20382 51	20382 43	20450 87	20450 89	20752 32	20752 97
2013B 19	2013B 17	20382 51	20382 45	20450 83	20450 92	20752 98	20752 97
2013B 19	2013B 18	20382 51	20382 47	20450 93	20450 95		
		20382 51	20382 49				
		20382 53	20382 37				
		20382 53	20382 38	20461 17	20461 18	20781 81	20781 83
		20382 53	20382 39	20461 19	20461 23	20781 81	20781 85
20223 00	20223 01	20382 53	20382 49	20461 19	20461 29	20824 00	20824 11
20223 00	20223 02	20382 55	20382 49	20461 31	20461 25		
		20382 57	20382 49	20461 34	20461 29	20840 00	20840 10
				20461 37	20461 29		
20224 21	20224 11					20851 13	20851 15
20224 21	20224 13					20851 19	20851 15
		20415 51	20415 11	20462 41	20462 11		
		20415 52	20415 11	20462 41	20462 13	20853 63	20853 65
20238 11	20238 01	20415 53	20415 13	20462 43	20462 15	20853 81	20853 65
20238 11	20238 03	20415 54	20415 13	20462 43	20462 17		
20238 11	20238 05	20415 56	20415 15	20462 47	20462 11	20864 10	20864 00
20238 11	20238 07	20415 57	20415 15	20462 47	20462 13		
20238 11	20238 19	20415 60	20415 17	20462 47	20462 15	20922 21	20922 15
		20415 63	20415 19	20462 47	20462 17	20922 21	20922 17
		20415 66	20415 21	20462 47	20462 17	20922 22	20922 18
		20415 67	20415 21	20462 49	20461 18	20922 22	20922 19
20321 11	20321 00	20415 72	20415 25			20923 24	20923 21
20321 21	20321 00	20415 75	20415 25			20923 25	20923 23
20321 31	20321 00	20415 74	20415 25	20489 00	20489 41	20923 31	20923 21
20321 51	20321 00	20415 87	20415 88			20923 31	20923 21
20321 71	20321 00	20415 87	20415 88			20923 31	20923 26
20321 98	20321 00	20415 87	20415 89			20923 33	20923 21
		20415 93	20415 92	2048A 13	2048A 12	20923 33	20923 27
				2048A 13	2048A 19	20923 35	20923 23
20323 73	20323 71					20923 35	20923 29
20323 74	20323 71						
		20416 11	20416 13			20925 31	20925 27
		20416 23	20416 13	20511 11	20511 21	20925 31	20925 28
20324 81	20324 83			20511 11	20511 22	20925 32	20925 30
20324 82	20324 83			20511 13	20511 27	20925 35	20925 29
		20430	20431	20511 13	20511 29	20925 35	20925 35
				20511 15	20511 31		
20331 18	20331 59			20511 15	20511 33		
20331 31	20331 59			20511 17	20511 35	20952 11	20952 00
20331 97	20331 59	20430	20432	20511 17	20511 37	20952 14	20952 00
				20511 28	20511 41	20952 17	20952 00
				20511 28	20511 42	20952 19	20952 00
20332 58	20332 98	20430 11	20431 01			20980 21	20980 01
20332 73	20332 98	20430 11	20431 03			20980 21	20980 02
20332 99	20332 98	20430 12	20431 05	20512 33	20512 30	20980 21	20980 03
		20430 12	20431 07	20512 33	20512 31	20980 21	20980 03
		20430 15	20431 09	20512 35	20512 43	20980 31	20980 04
20336 61	20336 67	20430 15	20431 11	20512 35	20512 44	20980 31	20980 05
20336 63	20336 67	20430 17	20431 13	20512 38	20512 50	20980 31	20980 08
20336 85	20336 67	20430 17	20431 16	20512 38	20512 51		
		20430 21	20431 18	20512 39	20512 60	20997	2099A
		20430 21	20431 19	20512 37	20512 61		
20338 15	20338 12	20430 23	20432 01	20512 37	20512 61	20997	2099B
20338 15	20338 13	20430 23	20432 05	20512 39	20512 70	20997 13	2099B 01
		20430 55	20432 07	20512 39	20512 71	20997 21	2099B 03
		20430 57	20432 07	20512 40	20512 80	20997 31	2099B 05
		20430 61	20432 09	20512 40	20512 81	20997 41	2099B 07
20343 18	20343 25	20430 63	20432 03	20512 42	20512 90	20997 51	2099B 09
20343 23	20343 25			20512 42	20512 91	20997 61	2099B 11
20343 29	20343 32					20997 71	2099B 13
20343 31	20343 32					20997 81	2099A 01
20343 38	20343 39	20440 99	20440 93			20997 81	2099A 02
20343 41	20343 39	20440 99	20440 98			20997 81	2099A 03
				20522 19	20522 16	20997 85	2099A 04
				20522 19	20522 17	20997 85	2099A 05
				20522 19	20522 18	20997 85	2099A 06
				20522 19	20522 20	20997 98	2099B 19
20352 34	20352 21	20450 51	20450 11				
20352 34	20352 33	20450 52	20450 11				
20352 34	20352 35	20450 53	20450 13				
20352 34	20352 39	20450 54	20450 13				
		20450 56	20450 15	20530 13	20530 20	20999 41	20999 43
		20450 57	20450 15	20530 13	20530 25	20999 41	20999 45
20372 98	20372 83	20450 80	20450 17	20530 19	20530 40	20999 98	20999 58
20372 98	20372 89	20450 83	20450 19	20530 19	20530 50	20999 98	20999 59

## Part 3. Current Industrial Reports by Product Code

[Not applicable for this report]

# 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.