

Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP-42 Section Number: 9.9.2

Reference Number: 2

Title: 1987 Census of Manufactures: Grain
Mill Products, Industry Series

Bureau of Census

US Department of Commerce

April 1990

AP-42 Section 9.9.2
Reference 2
Report Sect. _____
Reference _____

1987

Census of Manufactures

MC87-I-20D

INDUSTRY SERIES

Grain Mill Products

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

Issued April 1990



U.S. Department of Commerce
Robert A. Mosbacher, Secretary
Thomas J. Murrin, Deputy Secretary
Michael R. Darby, Under Secretary
for Economic Affairs

BUREAU OF THE CENSUS
Barbara Everitt Bryant, Director

ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 98 percent (specialization ratio). In 1982, the specialization ratio was 97 percent.

Establishments in this industry also accounted for 97 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1982, the coverage ratio was 94 percent. The products primary to industry 2041 no matter in what industry they were produced, appear in table 6a and aggregate to \$4.7 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the flour and other grain mill products industry amounted to \$3.7 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 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 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 1987 definition of this industry is the same as that used in the 1972/7 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1987 Census of Manufactures, Industry 2043, Cereal Breakfast Foods, had employment of 16.0 thousand. The employment figure was 3 percent above the 15.6 thousand reported in 1982. Compared with 1986, employment decreased 2 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses. The leading States in employment in 1987 were Michigan, California, Illinois, and Iowa. This represents a shift from 1982 when Michigan, Illinois, Iowa, and New York were the leading States in employment.

The total value of shipments for establishments classified in this industry was \$6.6 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2043 shipped \$5.0 billion of cereal breakfast foods products considered primary to the industry, \$1.3 billion of

secondary products, and had \$319.0 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 the industry was 79 percent (specialization ratio). In 1982, the specialization ratio was 77 percent.

Establishments in this industry also accounted for 98 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1982, the coverage ratio was 96 percent. The products primary to industry 2043, no matter in what industry they were produced, appear in table 6a and aggregate to \$5.1 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the cereal breakfast foods industry amounted to \$1.7 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of 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 or meal. Other important products of this industry include brown rice, milled rice (including polished rice), rice polish, and rice bran.

The 1987 definition of this industry has been revised from that used in the 1972 Standard Industrial Classification (SIC) manual. However, the SIC number and title are unchanged. 1972 SIC-based industry 2044 was split. Head rice packaged with other ingredients was reclassified into new industry 2099, Food Preparations, Not Elsewhere Classified. The effect of the revisions on the data is summarized in tables 1c-1 and 1c-2. During the 1987 processing, each establishment was classified according to both the old and new SIC. Table 1c-1 shows the distribution of the new industry among the old SIC classifications. Table 1c-2 shows the distribution of the old SIC-based industries among the new SIC classifications.

In the 1987 Census of Manufactures, Industry 2044, Rice Milling, had employment of 4.5 thousand. The leading States in employment in 1987 were Arkansas, California, Texas, Louisiana, and Mississippi, accounting for 93 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$1.2 billion.

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

Table 1a-1. **Historical Statistics for the Industry (1987 Basis): 1987 and Earlier Years**

(Industries with only 1987 data are revised for 1987. Table 1a-2 contains historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the old SIC basis. Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes)

Year ¹	All establishments ²			All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials ⁵ (million dollars)	Value of shipments (million dollars)	New capital expenditures ⁶ (million dollars)	End-of-year inventories ⁷ (million dollars)	Ratios	
	Companies ² (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization ⁷ (per cent)	Coverage ⁸ (per cent)
INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS															
1987 Census	240	358	165	13.3	354.6	9.9	21.4	246.0	1 336.7	3 657.0	4 984.8	79.5	346.8	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	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	25.6	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	3 760.0	56.9	302.8	(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
1976 ASM	(NA)	(NA)	(NA)	17.5	217.1	12.5	26.9	149.0	746.1	3 343.9	4 095.9	53.6	303.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	17.7	204.0	12.9	27.7	139.3	714.9	3 589.5	4 327.6	45.8	328.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	17.4	185.3	13.0	28.1	128.7	609.1	3 902.1	4 502.2	44.0	381.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	17.0	167.9	12.7	28.4	118.5	589.1	2 785.7	3 328.3	29.8	375.7	(NA)	(NA)
1972 Census	340	457	181	16.1	152.8	11.9	26.9	108.1	509.8	1 885.2	2 380.0	30.0	211.3	97	95
INDUSTRY 2043, CEREAL BREAKFAST FOODS															
1987 Census	33	53	34	16.0	598.9	13.1	28.4	478.6	4 904.5	1 669.8	6 565.7	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	1 638.2	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)	15.6	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	1 261.3	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
1976 ASM	(NA)	(NA)	(NA)	15.0	241.6	12.6	25.6	196.5	1 234.7	927.9	2 158.2	76.1	135.1	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	13.9	209.6	11.6	24.9	169.3	1 055.9	979.4	2 027.7	54.8	117.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	13.9	181.9	11.6	24.2	146.0	808.5	837.2	1 641.1	54.9	126.7	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	13.1	161.6	11.0	23.5	129.6	710.0	568.4	1 281.1	33.9	99.7	(NA)	(NA)
1972 Census	34	47	26	12.9	140.9	10.7	21.6	111.6	688.4	439.1	1 125.5	24.9	78.8	77	84
INDUSTRY 2044, RICE MILLING¹⁰															
1987 Census	48	63	35	4.5	89.1	3.5	7.3	60.4	466.7	822.4	1 234.9	48.9	396.5	98	95
INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS¹⁰															
1987 Census	118	149	97	12.1	275.9	8.2	16.5	156.8	1 278.8	1 339.6	2 625.1	66.1	152.6	89	78
INDUSTRY 2046, WET CORN MILLING															
1987 Census	32	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	2 776.7	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	38	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
1976 ASM	(NA)	(NA)	(NA)	11.0	179.8	8.0	16.5	126.1	650.2	1 352.4	2 002.5	164.7	163.7	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	10.9	162.9	7.9	16.5	112.7	872.9	1 274.8	2 141.7	157.8	142.9	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	11.1	151.4	7.7	15.9	92.5	673.4	1 197.5	1 852.1	82.1	143.6	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	11.7	143.7	8.2	17.0	94.1	359.7	768.9	1 123.0	67.3	91.7	(NA)	(NA)
1972 Census	26	41	27	12.1	137.7	8.4	17.1	88.6	331.2	498.7	832.3	59.7	82.8	93	97
INDUSTRY 2047, DOG AND CAT FOOD¹⁰															
1987 Census	130	186	101	13.4	365.8	9.9	20.5	244.2	2 741.5	2 296.8	5 069.3	108.2	234.9	99	97
INDUSTRY 2048, PREPARED FEEDS, N.E.C.¹⁰															
1987 Census	1 182	1 738	545	34.5	720.4	19.5	40.8	349.0	2 616.2	8 854.5	11 468.2	153.7	589.3	98	96

¹In 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 1972, see 1972 Census of Manufactures, vol. II, table 1a of the industry chapter.

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

³Includes establishments with payroll at any time during year.

⁴Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

⁵Detailed data on materials consumed by type are shown in table 7.

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

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

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

⁹Estimates for new capital expenditures have associated standard error of 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

¹⁰Industry definition is new for 1987 Census of Manufactures. An explanation of the Standard Industrial Classifications revision appears in the Summary of Findings of this report.

Table 2. Industry Statistics for Selected States: 1987 and 1982—Con.

[Excludes data for auxiliaries. States with 150 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1987											1982		
	E1	All establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ² (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 2041, FLOUR AND OTHER GRAIN MILL PRODUCTS—Con.														
Pennsylvania	E1	28	3	.3	6.2	.2	.5	4.8	22.4	109.0	131.7	.9	.3	22.3
Tennessee	-	16	9	1.4	36.9	1.0	2.1	24.9	234.4	467.7	702.0	(D)	.9	115.8
Texas	E1	17	9	1.1	25.1	.9	1.9	15.7	101.5	167.6	268.5	4.4	1.0	48.7
Utah	-	9	4	.3	8.8	.2	.5	6.2	30.7	71.7	102.5	(D)	BB	(D)
Washington	E1	8	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.4	14.1
INDUSTRY 2043, CEREAL BREAKFAST FOODS														
United States	-	53	34	16.0	598.9	13.1	28.4	478.6	4 904.5	1 669.8	6 565.7	333.4	15.6	2 622.5
California	-	13	7	2.1	76.2	1.7	3.7	57.6	582.9	221.3	803.9	43.2	EE	(D)
Illinois	-	4	4	2.0	72.0	1.6	3.4	54.9	654.4	221.0	879.4	(D)	2.1	323.3
Iowa	-	3	2	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Massachusetts	-	4	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Michigan	-	3	3	3.8	173.1	3.2	7.7	143.4	1 074.9	301.5	1 370.7	(D)	FF	(D)
Minnesota	-	5	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Missouri	-	1	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Nebraska	-	1	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
New York	-	2	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Ohio	-	4	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Pennsylvania	-	2	2	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Tennessee	-	2	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
INDUSTRY 2044, RICE MILLING														
United States	E1	63	35	4.5	89.1	3.5	7.3	60.4	466.7	822.4	1 234.9	48.9	(NA)	(NA)
Arkansas	-	11	7	1.3	21.9	1.1	2.4	16.3	53.7	228.2	264.2	9.5	(NA)	(NA)
California	-	12	7	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Louisiana	-	8	8	.5	7.6	.4	.9	5.4	43.8	75.7	114.1	1.5	(NA)	(NA)
Mississippi	-	5	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Texas	E2	12	8	1.1	23.6	.8	1.7	14.4	97.3	250.0	341.7	12.5	(NA)	(NA)
INDUSTRY 2045, PREPARED FLOUR MIXES AND DOUGHS														
United States	-	149	97	12.1	275.9	8.2	16.5	156.8	1 278.8	1 339.6	2 625.1	66.1	(NA)	(NA)
Arkansas	E5	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California	-	14	9	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Colorado	E3	3	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Georgia	-	5	4	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	E1	15	10	1.9	38.8	1.2	2.3	22.1	230.8	266.2	497.2	(D)	(NA)	(NA)
Indiana	-	3	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Maryland	E6	4	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Michigan	E1	7	5	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Minnesota	-	3	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri	-	4	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Jersey	E1	7	5	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New York	-	9	6	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Ohio	-	7	7	.5	9.7	.4	.7	7.1	43.7	60.7	104.8	(D)	(NA)	(NA)
Oregon	E2	5	3	.2	2.5	.1	.3	1.6	8.9	16.6	25.3	.5	(NA)	(NA)
Pennsylvania	-	5	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
South Carolina	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Tennessee	-	4	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Texas	-	9	4	.6	16.5	.5	1.1	10.4	121.3	69.5	190.3	(D)	(NA)	(NA)
Virginia	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Washington	-	6	4	.3	12.4	.2	.7	6.3	44.5	74.6	119.4	1.4	(NA)	(NA)
Wisconsin	-	4	3	.6	12.9	.4	.7	6.9	48.1	47.5	95.7	(D)	(NA)	(NA)
INDUSTRY 2046, WET CORN MILLING														
United States	-	60	35	8.6	298.9	5.9	12.9	192.8	2 074.5	2 694.4	4 788.9	281.9	9.5	1 157.4
Colorado	-	3	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	-	10	6	2.2	82.0	1.6	3.8	58.2	558.0	849.3	1 415.1	79.1	FF	(D)
Indiana	-	4	4	1.6	56.5	1.1	2.5	37.3	285.7	284.1	577.7	(D)	1.7	173.8
Iowa	-	7	7	2.4	88.5	1.6	3.4	52.2	753.5	808.1	1 564.1	77.4	3.2	415.7
Kansas	-	2	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Maine	-	4	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri	-	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Ohio	-	2	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Tennessee	-	3	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1987 and 1982—Con.

[Excludes data for auxiliaries. States with 150 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1987											1982	
	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 employ-ees ² (1,000)	Value added by manufac-ture (million dollars)
	Total (no.)	With 20 employ-ees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 2047, DOG AND CAT FOOD													
United States	186	101	13.4	365.8	9.9	20.5	244.2	2 741.5	2 296.8	5 069.3	108.2	(NA)	(NA)
Alabama	4	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
California	17	7	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Colorado	6	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Georgia	3	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	9	6	1.0	31.1	.8	1.5	21.7	167.4	108.9	287.8	(D)	(NA)	(NA)
Indiana	4	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Iowa	7	5	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Kansas	8	5	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Minnesota	E1 6	3	.3	7.1	.2	.5	4.9	37.8	36.6	71.6	1.2	(NA)	(NA)
Mississippi	4	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri	10	6	.5	12.3	.4	1.0	9.3	148.9	96.1	245.4	2.9	(NA)	(NA)
Nebraska	E1 2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Jersey	E9 3	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Mexico	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New York	E1 6	6	.7	19.0	.5	1.0	13.5	231.7	141.6	371.3	4.0	(NA)	(NA)
Ohio	14	7	1.1	37.8	.8	1.8	26.1	237.3	178.2	415.7	(D)	(NA)	(NA)
Oklahoma	4	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Pennsylvania	11	9	1.6	46.9	1.0	1.9	25.6	245.5	164.7	407.3	11.2	(NA)	(NA)
Tennessee	E1 6	4	.2	3.7	.2	.3	2.4	28.6	29.5	57.6	(D)	(NA)	(NA)
Texas	E2 12	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Utah	E1 3	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Wisconsin	8	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
INDUSTRY 2048, PREPARED FEEDS, N.E.C.													
United States	E1 1 738	545	34.5	720.4	19.5	40.8	349.0	2 616.2	8 854.5	11 468.2	153.7	(NA)	(NA)
Alabama	41	17	1.0	20.3	.6	1.4	11.9	48.7	272.9	321.0	4.8	(NA)	(NA)
Arizona	8	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Arkansas	46	17	1.0	17.7	.7	1.4	9.2	84.8	427.1	511.2	(D)	(NA)	(NA)
California	E3 100	40	2.4	60.6	1.3	3.0	30.2	169.1	735.9	904.6	11.2	(NA)	(NA)
Colorado	E4 29	8	.5	10.3	.2	.5	4.3	33.5	93.0	126.7	.7	(NA)	(NA)
Connecticut	5	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Delaware	7	4	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Florida	E2 31	11	.7	12.9	.4	.9	6.9	35.3	176.5	211.5	1.6	(NA)	(NA)
Georgia	E1 58	26	1.5	27.7	.9	1.8	13.1	141.4	510.8	650.9	7.4	(NA)	(NA)
Idaho	E3 12	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Illinois	E2 82	27	2.5	58.5	1.3	2.4	24.8	203.0	499.1	703.6	(D)	(NA)	(NA)
Indiana	46	18	.8	18.8	.5	1.0	9.6	110.7	237.9	347.1	(D)	(NA)	(NA)
Iowa	132	46	3.1	70.4	1.3	2.7	25.8	234.7	642.0	872.6	(D)	(NA)	(NA)
Kansas	52	14	1.0	19.8	.6	1.4	10.4	64.1	192.6	255.6	(D)	(NA)	(NA)
Kentucky	34	9	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Louisiana	E1 22	9	.3	4.7	.2	.5	3.3	21.5	84.8	106.5	.8	(NA)	(NA)
Maryland	14	4	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Michigan	E2 22	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Minnesota	E1 64	17	1.1	25.1	.6	1.2	11.1	75.0	227.4	301.7	(D)	(NA)	(NA)
Mississippi	E1 32	6	.4	5.5	.3	.6	3.5	22.3	134.8	157.6	(D)	(NA)	(NA)
Missouri	E2 64	21	1.2	26.7	.7	1.5	12.8	95.1	323.3	418.6	10.9	(NA)	(NA)
Montana	E3 18	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nebraska	E3 83	23	1.5	31.3	.9	1.8	15.6	185.5	271.3	461.4	3.0	(NA)	(NA)
New Jersey	E5 12	7	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Mexico	E8 8	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New York	E1 54	15	.8	17.3	.5	1.0	10.1	55.1	201.1	256.4	(D)	(NA)	(NA)
North Carolina	E1 84	29	1.5	27.7	1.0	2.0	15.0	117.4	549.4	666.1	(D)	(NA)	(NA)
Ohio	E2 50	11	.8	16.1	.5	1.0	8.3	42.7	161.7	204.5	(D)	(NA)	(NA)
Oklahoma	E1 35	11	.7	13.2	.4	.9	6.7	33.4	151.0	184.2	1.6	(NA)	(NA)
Oregon	E4 26	7	.4	9.5	.2	.5	4.2	26.1	101.6	127.8	2.1	(NA)	(NA)
Pennsylvania	E3 85	15	1.5	34.6	.6	1.4	11.1	118.6	371.8	490.0	22.4	(NA)	(NA)
South Carolina	E1 18	6	.3	4.4	.2	.4	2.1	10.2	58.3	68.2	(D)	(NA)	(NA)
South Dakota	E2 21	9	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Tennessee	E3 33	12	.7	12.0	.4	.9	7.0	37.7	167.9	205.5	(D)	(NA)	(NA)
Texas	E1 104	38	2.5	43.6	1.5	3.3	23.9	138.5	564.7	702.8	10.2	(NA)	(NA)
Utah	E1 15	5	.3	5.5	.2	.4	2.6	26.0	67.1	93.5	1.2	(NA)	(NA)
Vermont	E1 9	6	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Virginia	29	7	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Washington	E1 37	10	.6	13.7	.3	.7	7.4	46.3	143.1	189.4	5.4	(NA)	(NA)
Wisconsin	E4 83	17	1.3	29.2	.7	1.6	12.6	100.3	267.7	366.3	4.3	(NA)	(NA)

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

¹Payroll and sales data for some small single-unit 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 whose 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.

²Statistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 150 employees or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: AA—150 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

Table 3a. Summary Statistics for the Industry: 1987

[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	240	33	48	118	32	130	1 182
All establishments do	358	53	63	149	60	186	1 738
With 1 to 19 employees do	193	19	28	52	25	85	1 183
With 20 to 99 employees do	125	8	20	56	12	58	516
With 100 employees or more do	40	26	15	41	23	43	29
Employment and labor costs:							
Employees 1,000	13.3	16.0	4.5	12.1	8.6	13.4	34.5
Compensation, total mil dol	445.6	739.7	109.9	339.5	370.1	444.8	862.9
Annual payroll do	354.6	598.9	89.1	275.9	298.9	365.8	720.4
Fringe benefits do	91.0	140.8	20.8	63.5	71.2	79.0	142.5
Social Security and other legally required payments do	42.2	51.8	10.5	27.3	29.4	32.2	71.3
Employer payments and other programs do	48.8	89.0	10.3	36.2	41.8	46.8	71.2
Production workers:							
Average for year 1,000	9.9	13.1	3.5	8.2	5.9	9.9	19.5
March do	9.8	12.6	3.4	8.2	6.0	10.0	19.2
May do	9.7	12.0	3.3	8.1	5.9	9.8	19.1
August do	9.8	13.6	3.5	8.1	5.8	9.7	19.4
November do	9.9	13.3	3.6	8.2	5.8	9.8	19.5
Hours millions	21.4	28.4	7.3	16.5	12.9	20.5	40.8
January to March do	5.3	7.0	1.8	4.0	3.3	5.3	10.2
April to June do	5.3	7.0	1.7	4.1	3.2	5.0	10.0
July to September do	5.4	7.4	1.8	4.1	3.2	5.1	10.2
October to December do	5.5	7.0	1.9	4.2	3.2	5.2	10.4
Wages mil dol	246.0	478.6	60.4	156.8	192.8	244.2	349.0
Value added by manufacture do	1 336.7	4 904.5	466.7	1 278.8	2 074.5	2 741.5	2 616.2
Cost of materials ¹ do	3 657.0	1 669.8	822.4	1 339.6	2 694.4	2 296.8	8 854.5
Materials, parts, containers, etc., consumed ² do	3 332.7	1 423.7	786.4	1 208.3	2 169.5	1 810.4	7 991.8
Resales do	218.0	156.2	6.9	96.8	68.7	401.1	713.1
Fuels do	13.2	27.6	6.9	7.8	232.3	29.4	52.3
Purchased electricity do	88.7	44.7	17.7	18.8	178.1	38.8	87.2
Contract work do	4.4	17.6	4.5	8.0	45.7	17.0	10.1
Quantity of electric energy used for heat and power:							
Purchased mil kWh	1 841.6	842.8	341.3	361.5	4 270.2	704.0	1 617.0
Generated less sold do	-	28.2	8.4	2.9	827.6	-	6.0
Total value of shipments mil dol	4 984.8	6 565.7	1 234.9	2 625.1	4 788.9	5 069.3	11 468.2
Primary products do	4 556.4	4 964.5	1 199.4	2 209.2	4 157.3	4 556.2	10 320.0
Secondary products do	80.5	1 282.2	24.4	282.4	559.1	46.6	207.0
Miscellaneous receipts, total do	348.0	319.0	11.1	133.5	72.5	466.6	941.3
Value of resales do	342.6	318.3	8.2	128.5	68.8	(D)	844.9
Contract receipts do	3.1	(D)	(D)	(D)	(D)	(D)	40.9
Other miscellaneous receipts do	2.3	(D)	(D)	(D)	(D)	7.0	55.5
Inventories by stage of fabrication:							
Beginning of 1987 mil dol	322.0	295.2	339.3	165.5	245.7	269.9	564.9
Finished goods do	77.9	159.6	79.8	73.7	122.4	151.3	206.9
Work in process do	12.5	1.4	41.3	8.1	8.9	3.9	61.5
Materials and supplies do	231.6	134.2	218.2	83.7	114.3	114.7	296.6
End of 1987 do	346.8	306.6	396.5	152.6	244.2	234.9	589.3
Finished goods do	82.0	169.2	120.8	68.0	103.0	121.0	218.1
Work in process do	17.3	.4	54.4	7.2	8.3	3.2	62.7
Materials and supplies do	247.5	137.1	221.4	77.4	132.9	110.7	318.5
Primary product specialization ratio percent	98	79	98	89	88	99	98
Coverage ratio do	97	98	95	78	94	97	96

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

¹Data 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.

²Data 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: 1987

[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 1 152.4	1 152.4	1 910.6	441.7	650.2	3 566.4	1 133.1	2 233.9
New capital expenditures ¹ 79.5	79.5	333.4	48.9	66.1	281.9	108.2	153.7
Used capital expenditures 3.5	3.5	.6	.4	2.8	2.4	1.6	15.5
Retirements 28.1	28.1	40.0	22.9	87.7	58.3	33.6	104.1
End of year 1 207.3	1 207.3	2 204.6	468.0	631.4	3 792.5	1 209.3	2 289.0
Buildings and other structures:							
Beginning of year 367.1	367.1	390.3	149.2	147.4	567.5	306.6	688.1
New capital expenditures 12.1	12.1	108.2	8.6	11.1	33.9	17.3	27.7
Used capital expenditures9	.9	-	.1	.7	1.3	.2	4.9
Retirements 4.4	4.4	2.5	7.0	5.8	11.7	4.8	20.9
End of year 375.7	375.7	496.1	150.9	153.5	591.0	319.3	679.8
Machinery and equipment:							
Beginning of year 785.3	785.3	1 520.3	292.5	502.8	2 998.9	826.5	1 565.9
New capital expenditures ¹ 67.4	67.4	225.2	40.3	55.0	248.0	90.9	126.0
Used capital expenditures 2.6	2.6	.6	.3	2.1	1.1	1.4	10.5
Retirements 23.7	23.7	37.5	15.9	82.0	46.6	28.8	83.2
End of year 831.6	831.6	1 708.5	317.1	477.9	3 201.5	890.0	1 619.2

See footnotes at end of table.

Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—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 comparability of product classes and product codes between 1982 and 1987, see appendixes. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	1987			1982		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
2041- --	FLOUR AND OTHER GRAIN MILL PRODUCTS—Con.						
20415 --	Flour mixes and refrigerated and frozen doughs and batters, made in flour mills (see also code 20450)—Con.						
	Flour mixes—Con.						
20415 72	Other prepared flour mixes, including cookie mixes: Shipped in containers less than 5 lb	5	(D)	(D)	8	*1 660.8	
20415 74	Shipped in containers 5 lb or more	4	530.3	11.3	10	865.7	
	Refrigerated doughs and batters:						
20415 81	Biscuit dough.....	-	-	-	-	-	
20415 85	Bread and bread-type roll dough, including dinner	-	-	-	-	-	
20415 87	Other doughs and batters, including pizza, coffeecake, pancake, cookie, etc.....	3	(D)	(D)	2	(D)	
	Frozen doughs and batters:						
20415 91	Bread and bread-type roll dough	1	(D)	(D)	(NA)	(?)	
20415 93	Other frozen doughs and batters, including pizza, coffeecake, pancake, cookie, etc.	-	-	-	(NA)	(?)	
20415 00	Flour mixes and refrigerated doughs, n.s.k.	-	(X)	-	(NA)	(X)	
20416 --	Other grain mill products	(NA)	(X)	82.2	(NA)	(X)	
20416 11	Rye flour.....	3	1 103.5	9.2	6	1 434.8	
20416 23	Other flour (excluding wheat, corn, rye)	4	(D)	(D)	9	3 063.6	
20416 27	Other mill feed (oats, rye, buckwheat, etc.)	9	(D)	(D)	13	613.5	
20416 00	Other grain mill products, n.s.k.....	(NA)	(X)	1.4	(NA)	(X)	
20410 --	Flour and other grain mill products, n.s.k.....	(NA)	(X)	150.5	(NA)	(X)	
20410 00	Flour and other grain mill products, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	13.5	(NA)	(X)	
20410 02	Flour and other grain mill products, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	137.0	(NA)	(X)	
2043- --	CEREAL BREAKFAST FOODS						
	Total	(NA)	(X)	5 081.1	(NA)	(X)	3
20430 --	Cereal breakfast foods:						
	Ready to serve:						
20430 11	Corn flakes and other corn breakfast foods.....	9	801.9	1 302.3	6	705.3	
20430 12	Wheat flakes and other wheat breakfast foods.....	10	841.7	1 359.6	10	719.8	
20430 15	Oat breakfast foods	10	382.3	706.9	9	(D)	
20430 17	Rice breakfast foods	9	257.1	518.1	7	275.8	
20430 21	Preparations of other grains and mixed grains, except infants' cereals	13	366.0	743.1	13	289.0	
20430 23	Infants' cereals, all types of grains.....	4	(D)	(D)			
	To be cooked before serving:						
20430 55	Farina and other wheat foods, except instant cereals	5	82.0	60.2	8	118.7	
20430 57	Rolled oats and oatmeal, except instant cereals	4	287.7	120.5	5	(D)	
20430 61	Preparations of other grains and mixed grains, except instant cereals.....	3	9.8	9.0	3	9.2	
20430 63	Instant hot cereals, all types of grain (mix-and-eat type)	3	(D)	(D)			
20430 00	Cereal breakfast foods, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	6.2	(NA)	(X)	
20430 02	Cereal breakfast foods, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	9.7	(NA)	(X)	
2044- --	RICE MILLING						
	Total	(NA)	(X)	*1 257.5	(NA)	(X)	*1
20440 --	Milled rice and byproducts:						
	Head rice not packaged with other ingredients:						
20440 11	Packed in bags 100 lb or more	30	**5 387.2	517.7	25	5 491.7	
20440 15	Packed in containers 3 lb or less	12	727.9	106.1	17	554.0	
20440 17	Packed in all other containers	16	*3 321.7	446.3	18	2 229.2	
20440 21	Second heads	15	892.2	48.8	13	348.5	
20440 35	Screenings and brewers' rice	15	657.4	33.2	16	542.8	
20440 51	Bran.....	14	(S)	14.8	16	997.7	
20440 99	All other milled rice and byproducts, including rice flour	12	(S)	65.0	15	4 050.1	
20440 00	Milled rice products, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	8.8	(NA)	(X)	
20440 02	Milled rice products, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	16.8	(NA)	(X)	

See footnotes at end of table.