

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Diversification and Integration in American Industry

Volume Author/Editor: Michael Gort

Volume Publisher: Greenwood Press

Volume ISBN: 0313-32442-5

Volume URL: <http://www.nber.org/books/gort62-1>

Publication Date: 1962

Chapter Title: Appendix D: Industry Data

Chapter Author: Michael Gort

Chapter URL: <http://www.nber.org/chapters/c1944>

Chapter pages in book: (p. 193 - 228)

APPENDIX D
Industry Data

INDUSTRY DATA

THIS appendix describes the sources and methods used to develop information on an industry basis for a number of variables which contribute in differing degree toward explaining patterns of diversification and integration. The tables are generally limited to variables whose sources are diverse or methods of computation relatively complex, or for which basic information is unpublished and hence not readily available. Data developed in other National Bureau studies are, of course, not reproduced here. Measures for "explanatory variables" were developed only for manufacturing industries.

In addition to those concerned with "explanatory variables," three tables derived from U.S. Bureau of the Census, *Company Statistics: 1954 Censuses of Business, Manufacturing, Mineral Industries*, Washington 1958, are presented.

In some instances, particularly for data used in conjunction with diversification measures derived from *Company Statistics*, information for explanatory variables was on an industry basis somewhat different in scope from that used for measures of diversification. The comparability, however, was deemed to be close enough to render the errors not crucial to the findings.

Growth

For the periods 1929-39 and 1939-54, measures of growth were obtained for totals of 223 and 271 industries, respectively. The levels of detail in classification of these industries are given below:

	1929-39	1939-54
4-digit industries	150	232
3-digit industries	22	22
Combinations of two or more		
4-digit industries	34	11
Combinations of two or more		
3-digit industries	17	6

Measures of growth were also obtained for eighteen major manufacturing groups and one combination of two such groups¹ for the periods 1929-39, 1939-54, 1929-37, and 1937-53.

Three measures of growth were used: (1) changes in output indexes, (2) changes in deflated value of product, and (3) changes in number of

¹ "Professional, scientific, and controlling instruments" was combined with "miscellaneous manufacturing industries." A measure for "ordnance and accessories" was not available.

APPENDIX D

production workers. These were expressed as a percentage of initial-year values.

The measures based on changes in output were obtained from output indexes developed by Kendrick.² The terminal year of these indexes is 1953. To obtain measures of growth for the period 1939-54, changes in output for 1939-53 were projected to 1954 on the basis of the ratio of value added in 1954 to that in 1953 (adjusted for price changes) for the relevant 2-digit groups in which the individual 3- or 4-digit industries fell.

In all cases for which 1937, 1939, 1952, and 1953 index numbers were given, the higher for each set of adjacent years was used to approximate more closely cyclical peaks in output. This was designed to eliminate the effect of excess capacity on measures of growth.³ The breakdown of industries for which growth during the two periods was measured on the basis of relative changes in output follows:

	1929-39	1939-54
4-digit industries	103	25
3-digit industries	21	20
Combinations of two or more		
4-digit industries	31	9
Combinations of two or more		
3-digit industries	17	6

In addition, the growth of the major (2-digit) groups was measured on this basis for the periods 1929-39 and 1939-53.

The number of industries for which growth could be measured according to available output indexes was insufficient for our purposes, since it provided no measure of growth for broad sectors of the industrial spectrum. Accordingly, other measures of growth were used.

Value-of-product data were obtained from the 1929, 1939, and 1954 Censuses of Manufactures for industries which remained comparable throughout each of the two periods 1929-39 and 1939-54. The data were adjusted for price changes on the basis of those BLS wholesale price indexes which most closely approximated, in terms of commodities to which the indexes referred, the composition of census industries. Measures

² John W. Kendrick, *Productivity Trends in the United States*, Princeton University Press for National Bureau of Economic Research, 1961. The data were obtained from worksheets developed for this study and may show minor differences from data eventually published.

³ The 1939 index number was not available for SIC industries 3331, 3332, and 3333, thus necessitating the use of 1937 index numbers.

INDUSTRY DATA

of growth for the two periods were obtained on this basis for the following industry classifications:

	<i>1929-39</i>	<i>1939-54</i>
4-digit industries	47	142
3-digit industries	1	2
Combinations of two or more 4-digit industries	3	0

The reclassification of census industries and the formation of new industries for the 1947 Census of Manufactures still left serious gaps in the measures of growth, particularly for chemicals, electrical machinery, and primary metals. However, the 1947 Census of Manufactures shows 1939 census data for number of establishments and number of production workers according to the 1947 Census classification. Thus a third measure of growth, namely, the percentage change in number of production workers, was used for some industries for the period 1939-54. The data were adjusted for changes in productivity on the basis of productivity indexes (output/employment) developed by Kendrick.⁴ The value of the index number for 1953 (the terminal year of Kendrick's study) was used for 1954. A breakdown by major industry groups of the 4-digit industries for which growth was measured on this basis is shown below:

	<i>Industries</i>
Chemicals	11
Stone, clay, and glass products	4
Primary metals	8
Machinery	20
Electrical machinery	11
Transportation equipment	5
Instruments	6
	<i>Combination Industries</i>
Transportation equipment	2
Instruments	2
Total	69

For twelve of the sixty-five industries, data on production workers were not available in the Preliminary Report of the 1954 Census of Manufactures.⁵ The number of production workers in 1954 was estimated for these industries on the basis of either 1952 or 1953 (obtained from the

⁴ *Productivity Trends*.

⁵ These measures were developed prior to the publication of the 1954 Census.

APPENDIX D

Annual Surveys of Manufactures). To bring the 1952 or 1953 statistic to a 1954 basis, an adjustment was made according to the change from 1952, or 1953, to 1954 (at the relevant 3-digit level) in price-deflated value added.

Growth measured by percentage change in value of product was compared with change in the number of production workers for a sample of thirty-five industries. The coefficient of rank correlation was .78, indicating at least a tolerable degree of similarity in results.

Productivity

Changes in labor productivity in 171 industries during 1929-37 and forty-six during 1937-53 were computed from productivity indexes (output/man-hours) developed by Kendrick.⁶ These changes were expressed as a percentage of initial-year values. A breakdown follows:

	1929-37	1937-53
4-digit industries	93	15
3-digit industries	26	18
Combinations of two or more		
4-digit industries	39	4
Combinations of two or more		
3-digit industries	13	9

Percentage change in labor productivity as well as in total factor productivity (capital and labor) was computed also from the same source for eighteen major manufacturing groups and one combination of two such groups.⁷ Because indexes for 1939 included only 65 of the 171 industries, 1937 was used. For the 1937-53 period, the 1953 productivity index number was estimated for 21 of the 46 industries. Indexes for these 21 industries were available only to 1950, 1951, or 1952. The extrapolation was made on the basis of the change in productivity at the relevant 2-digit level from 1950, 1951, or 1952 (the last year for which the index was available at a 4- or 3-digit level) to 1953.

Average Size of Plant

Measures of average plant size in 1947 were obtained for 444 4-digit manufacturing industries and twenty major manufacturing groups. Measures for 1935 were obtained for two major groups and a total of 233 individual industries at the following levels of detail:

202 4-digit industries

⁶ *Productivity Trends*.

⁷ See note 1.

INDUSTRY DATA

16 3-digit industries

13 Combinations of two or more 4-digit industries

2 Combinations of two or more 3-digit industries

For each industry, average size of plant was computed by dividing the number of employees in establishments with twenty or more employees by the total number of such establishments. The data were obtained from the Census of Manufactures for 1947, and the "Supplement on Wage Earners in Establishments Classified According to Number of Wage Earners, by Industry," Census of Manufactures, 1935. Data on establishments with twenty or fewer employees were omitted to obtain a better indication of differences among industries in the most efficient plant size. The most efficient size of plant is probably more closely related to average plant size if the large numbers of very small, low-efficiency establishments, likely to exist in some industries, are excluded. The Spearman coefficients of rank correlation for average plant size, using all establishments, and average plant size derived from data excluding establishments with twenty or fewer employees, were .95 for the fifty industries with highest average plant size and .74 for the twenty-five with lowest size.

Measures of average size of plant in 1947 were also computed for manufacturing industry groupings used in *Company Statistics*. The two bodies of data (information on plant size and data from *Company Statistics*) were made comparable by combining 1947 census industries into *Company Statistics* industries. Data for all establishments, including those with fewer than twenty employees, were used.

Average Size of Firm

Measures of average firm size in 1947 were obtained for 101 *Statistics of Income* "minor industries,"⁸ a level of classification roughly comparable to that of the 3-digit SIC code. For each industry, average size of firm was computed by dividing total corporate assets by number of corporate returns. In addition, based on published data from *Statistics of Income*, average firm size in 1948 was computed for eighteen major manufacturing groups and one combination of two such groups.⁹ Corporations with total assets of \$50,000 and under were omitted from the 1948 computations. This was done with the objective of eliminating the effect of low-efficiency small firms which may be present in some industries, but the adjustment was not made for other years. Average firm size (total assets/number of

⁸ Internal Revenue Service, *Source Book for Statistics of Income*.

⁹ See note 1.

APPENDIX D

firms) for 1938 was also computed for sixteen major manufacturing groups and one combination of two groups.

Technical Personnel Ratio

Measures of the number of technical personnel (engineers, surveyors, and chemists) per 10,000 of all personnel were developed by Nestor Terleckyj at the 3- and 4-digit levels for 68 industries in 1930, 54 in 1940, and 53 in 1950, as well as for 19 major manufacturing groups for 1930, 1940, and 1950.¹⁰ The individual ratios for three major groups¹¹ in 1930 were estimated on the assumption that they were the same relative to their 1940 values as for the three groups combined. The data were drawn from the Census of Population for 1930, 1940, and 1950.

Concentration Ratios

Concentration ratios for 1947, based on the ratio of value of product contributed by the four leading producers in an industry to value of product for the industry, were obtained for 350 4-digit manufacturing industries from U.S. Federal Trade Commission, *Changes in Concentration in Manufacturing, 1935-1947 and 1950, 1954*, Table 1. This source also indicates 1935 concentration ratios for some industries. When these data were used in connection with information on product additions for 1929-39, 1935 concentration ratios were substituted for 1947 values for a few industries in which a sizable change in concentration occurred between 1935 and 1947.

Concentration indexes developed by Stigler¹² were available at the *Statistics of Income* "minor industry" level (roughly comparable to the SIC 3-digit level). For each 3-digit industry, the concentration index is a weighted average, using value added as weights, of the component 4-digit-industry concentration ratios.

*Cyclical Variability*¹³

Measures of cyclical variability were developed for those production series which are included in the Federal Reserve System's Index of Industrial Production.¹⁴ Measures for two periods were developed. The first period was from 1923 through 1941, and the second from 1947 through

¹⁰ Nestor Terleckyj, unpublished study of factors affecting changes in productivity.

¹¹ "Fabricated metal products," "machinery," and "electrical machinery."

¹² George J. Stigler "The Mobility of Capital in Manufacturing Industries," MS., NBER.

¹³ These measures were prepared by the author jointly with Nestor Terleckyj and Jerome Strong.

¹⁴ The data were obtained from the *Federal Reserve Bulletin* for August 1940, October 1943, December 1953, January 1956, and July 1957.

INDUSTRY DATA

1955. For some series only one period could be covered; for others, both. When series were combined to conform with SIC industries, weights used in the Index of Industrial Production were used.

Measures of Cyclical Amplitude

All turning points in the relevant period were marked off and identified as troughs and peaks. The first and last years of the periods were treated as peaks or troughs even though they may not have constituted turning points. A turning point was defined as a change in direction in annual data.

The periods were then divided into trough-to-trough cycles and measures of amplitude computed in the following way:

1. The changes from trough to peak were divided by number of years in the relevant expansion phase of the cycle. Similarly, peak-to-trough changes were divided by the number of years in the relevant cyclical contraction.

2. The average annual changes of the two phases were added and then divided by the value of the index at the peak. Thus average annual changes were expressed as a percentage of the peak value, rendering measures for different cycles comparable. The use of the number of years in each phase of the specific cycle as a denominator eliminates much of the effect of differences in trends in particular industries.

3. If at the beginning or at the end of the series only one phase was left over, the average annual change of this phase was divided by the adjacent peak value and multiplied by two to make it comparable with measures for full cycles.

4. All amplitude measures for individual cycles were added and divided by the number of cycles times two. The resulting average was thus interpreted as representing an annual cyclical percentage change (relative to peak) found in the cycles of the relevant period.

Measure of Cyclical Frequency

To measure the frequency of cyclical fluctuations, the turning points within the period were counted and their number divided by the number of years in the period covered by data for particular indexes.

The Level-of-Industry Detail

The level-of-industry detail for each explanatory variable used in Chapter 7 to analyze product additions is shown in Table D-1 for 1929-39, 1939-50, and 1950-54.

APPENDIX D

TABLE D-1
THE CLASSIFICATION OF PRODUCT CHANGES
ACCORDING TO EIGHT VARIABLES

Variable	Period	No. of Product Additions Classified at:		Total No. of Product Additions		Total No. of Product Additions
		3- and 4-digit Levels	2-digit Levels	Classified	Unclassified	
Concentration ratio	1929-1939	467	0	467	17	484
	1939-1950	449	0	449	25	474
	1950-1954	390	0	390	41	431
Amplitude of cyclical fluctuations	1929-1939	111	278	389	95	484
	1939-1950	324	116	440	34	474
	1950-1954	256	137	393	38	431
Frequency of cyclical fluctuations	1929-1939	84	307	391	93	484
	1939-1950	330	114	444	30	474
	1950-1954	264	137	401	30	431
Technical personnel ratio	1929-1939	185	290	475	9	484
	1939-1950	162	283	445	29	474
	1950-1954	178	223	401	31	431
Average size of plant	1929-1939	395	6	401	83	484
	1939-1950	317	0	317	157	474
	1950-1954	267	0	267	164	431
Productivity change	1929-1939	233	240	473	11	484
	1939-1950	118	333	451	23	474
	1950-1954	106	293	399	32	431
Growth	1929-1939	319	28	347	137	484
	1939-1950	365	0	365	109	474
	1950-1954	323	0	323	108	431
Average size of firm	1939-1950	399	0	399	75	474
	1950-1954	356	0	356	75	431

SOURCES: Described in text of Appendix D.

INDUSTRY DATA

TABLE D-2
THE GROWTH OF 3- AND 4-DIGIT INDUSTRIES, 1929-39

SIC. Industry Number	Industry	Percentage Growth 1929-39	Measure Used ^a
3741	Locomotives and parts	-7.06	2
3492	Safes and vaults	-6.91	1
3294	Graphite, ground and refined	-6.32	1
374	Locomotives and parts and railroad and street cars	-6.18	2
3985	Fireworks	-5.38	1
3742	Railroad and street cars	-5.28	2
3493	Steel springs	-5.12	1
2445	Cooperage	-4.91	2
3799	Carriage, wagons, sleighs, etc.	-4.63	2
3192	Saddlery, harnesses and whips	-4.62	2
3393	Welded and heavy-riveted pipe	-4.56	2
2863	Gum naval stores	-4.52	1
3576	Scales and balances	-4.44	1
3522	Agricultural equip. (except tractors)	-4.44	2
2491	Wood preserving	-4.40	1
3441	Structural and ornamental products	-4.32	2
3332	Primary lead	-4.17 ^b	2
3161	Luggage	-3.98	1
3442	Metal doors, sash, frames and trim	-3.89	1
325+ } 3297 }	Clay products, n.e.c.	-3.60	2
2444	Wooden boxes (except cigar boxes)	-3.49	1
3931	Pianos	-3.48	2
2991	Fuel briquets and packaged fuel	-3.43	2
3391	Iron and steel forgings	-3.35	1
3444	Sheet metal work	-3.32	2
2863	Gum naval stores	-3.29	2
3296	Sand-lime products	-3.28	2
371	Motor vehicles and equipment	-3.22	2
2425	Excelsior mills	-3.19	2
2383	Suspenders and garters	-3.09	2
2091	Baking powder, leavening compounds	-3.09	2
2493	Mirror frames and picture frames	-3.07	1
333	Primary nonferrous metals	-2.83	2
°	Lumber mill products	-2.81	2
242+ } 243 }	Lumber and timber mill products, n.e.c. planing mill products, excelsior	-2.81	2
3241	Hydraulic Cement	-2.77	2
3421+ } 3422 }	Cutlery and edge tools	-2.75	2
2882	Linseed oil mills	-2.69	2
3293	Gaskets and asbestos insulation	-2.65	2
Part of 3321	Cast-iron pipe	-2.64	2
2296	Linen goods	-2.51	2
2097	Manufactured ice	-2.49	2
3583	Sewing machines	-2.48	1
3121	Industrial leather belting	-2.45	2
2131	Chewing and smoking tobacco	-2.44	2

(continued)

APPENDIX D

TABLE D-2 (continued)

SIC. Industry Number	Industry	Percentage Growth 1929-39	Measure Used ^a
3311 +	Blast furnaces and electrometallurgical products	-2.40	2
3313			
Part of 3341	Secondary nonferrous metals, nonprecious	-2.43 ^b	2
2043	Cereal preparations	-2.38	2
3424 +	Hand tools, n.e.c., files, hand saws and saw blades	-2.37	2
3425 +			
3423	Files	-2.27	1
3424	Files	-2.27	1
3495	Screw machine products and wood screws	-2.25	1
2121	Cigars	-2.21	2
2443	Cigar boxes	-2.11	2
3494 +	Bolts, nuts, washers and screw machine products	-2.09	2
3495			
326	Pottery	-2.09	2
"	Primary nonferrous metals	-2.08	2
3466	Galvanizing and other hot dip coating	-2.08	1
2441 +	Basket and rattan and willowware, not including furniture	-2.01	1
2442			
2325	Men's and boys' cloth hats and caps	-1.98	2
3331	Primary copper	-1.96 ^b	2
3425	Saws	-1.95	1
283	Drugs and medicine (not including drug grinding)	-1.94	1
3021	Rubber footwear	-1.92	2
3494	Bolts, nuts and rivets	-1.92	1
"	Brooms	-1.79	2
2062	Cane sugar refining	-1.73	2
3572 +	Computing and related machines and typewriters	-1.69	2
3571			
3011	Tires and inner tubes	-1.65	2
"	Primary iron and steel	-1.63	2
2881	Cottonseed oil mills	-1.59	2
3953	Hand stamps, stencils, and brands	-1.53	1
3982	Cork products	-1.52	1
3872	Watchcases	-1.48	1
3471	Lighting fixtures	-1.48	1
2651	Envelopes	-1.47	1
3333	Primary zinc	-1.39 ^b	2
3423	Hand tools (except edge tools, machine tools, files and saws)	-1.38	1
3543	Machine-tool accessories and machinists' precision tools	-1.38	1
293	Coke oven products (beehive and coke-oven)	-1.31	2
2492	Lasts and related products	-1.30	1
2693	Wallpaper	-1.30	1
"	Fabricated iron and steel	-1.16	2
3943	Children's vehicles	-1.13	2
3552	Textile machinery	-1.05	1
2388	Handkerchiefs	-0.99	2

(continued)

INDUSTRY DATA

TABLE D-2 (continued)

SIC. Industry Number	Industry	Percentage Growth 1929-39	Measure Used ^a
315	Leather gloves and mittens	-0.95	2
3392	Wire drawing	-0.92	2
3432 +	Oil burners and heating and cooking apparatus	-0.91	2
3439			
2271	Wool carpets, rugs, and carpet yarn	-0.87	2
°	Fabricated nonferrous	-0.86	2
2041 +	Flour and meal and blended and prepared flour	-0.78	2
2045			
2298	Cordage and twine	-0.72	2
3265	China decorating for the trade	-0.63	1
227	Carpets, rugs and other floor coverings	-0.51	2
2381 +	Fabric and combination dress and work gloves	-0.53	2
2382			
2898	Salt	-0.39	2
2094	Corn products	-0.25	2
2826	Explosives	-0.22	2
2051	Baked goods and other bakery products	-0.09	2
324 +	Cement, lime and concrete, wall plaster and board	-0.04	2
327			
2562	Window shades	0.05	2
2073	Chewing gum	0.08	1
205	Bakery products	0.15	2
Part of 3497	Tin and other foils	0.15	2
3481	Nails and spikes	0.23	2
°	Foundry and machine shop products	0.23 ^b	2
2897	Insecticides and fungicides and foundry supplies	0.34	1
204	Grainmill products	0.42	2
3995	Umbrellas, parasols and canes	0.45 ^b	2
205 +	Bakery products and confectionery and related products	0.46	2
207			
2851 +	Paints, varnishes, lacquers and color pigments	0.46	1
2852			
3988	Morticians' goods	0.48	2
3489	Wirework, n.e.c.	0.57	2
2223 +	Cotton goods	0.58	2
2224 +			
2233	Allied chemical substances	0.58	2
287	Fertilizers	0.59 ^b	2
2274	Hardsurface floor coverings	0.63	2
2515	Mattresses and bed springs	0.67	2
1951	Small arms	0.71 ^b	2
2281	Fur felt hats and hat bodies	0.83	2
285	Paints and allied products	0.90 ^b	2
231 +	Men's and boys' outerwear	0.92	2
232			
2861 +	Hardwood and softwood distillation	0.93	2
2862			

(continued)

APPENDIX D

TABLE D-2 (continued)

SIC. Industry Number	Industry	Percentage Growth 1929-39	Measure Used ^a
2254	Knit underwear mills	0.93	2
2992	Lubricating oils and greases not made in petroleum refineries	0.95	1
3981	Brooms and brushes	0.96	1
373	Ships and boats	1.02	2
2327+	Men's and boys' suits and coats, separate trousers and work shirts, boys' work clothes, leather and sheep-lined clothing	1.16	2
2328+			
2311+			
2329+			
2312+			
2386			
2321	Men's dress shirts and nightwear	1.19	2
206	Sugar	1.19	2
3111	Leather tanning and finishing	1.21 ^b	2
2052	Biscuits, crackers, and pretzels	1.27	2
2031+	Canned seafood and cured fish	1.28	2
2032			
2071			
2021	Creamery butter	1.31	2
2096	Vinegar and cider	1.52	2
2295	Coated fabrics except rubberized	1.56	2
314	Footwear (except rubber)	1.57	2
2024	Ice cream and ices	1.58	2
221	Woolen and worsted manufactures	1.61	2
2095	Flavoring extracts	1.68	1
3468	Electroplating	1.77	1
3274	Lime	1.82	2
3491	Steel barrels, kegs and drums	1.93	1
Part of 3341	Secondary nonferrous metals, precious	1.94	2
302+	Rubber footwear, reclaimed rubber, rubber, n.e.c.	2.06	2
303+			
309			
2044	Rice cleaning and polishing	2.09	2
202	Dairy products	2.11	2
2253+	Knit outerwear mills and knit glove mills	2.20	2
2255			
2612	Paper and board mills	2.35	2
2865+	Natural tanning and dyeing materials, sulfonated oils and assistants	2.36	2
2843			
3949	Sporting and athletic goods	2.38	2
3496	Collapsible tubes	2.55	2
2841	Soap and glycerine	2.57	2
3292	Asbestos products	2.60 ^b	2
2093	Oleomargarine	2.61 ^b	2
2952	Roofing felts and coatings	2.70	2
2911	Petroleum refining	2.75	2
3963	Buttons	2.76	2
261	Paper and pulp mills	2.77	2
2098	Macaroni and spaghetti	2.79	2

(continued)

INDUSTRY DATA

TABLE D-2 (continued)

SIC. Industry Number	Industry	Percentage Growth 1929-39	Measure Used*
2111+	Cigarettes and cigars	2.80	2
2121			
3231	Products of purchased glass	2.92 ^b	2
3952	Lead pencils and crayon	2.96 ^b	2
2042	Prepared animal feeds	2.99	2
3431	Metal plumbing fixtures	2.99	2
3842	Surgical and orthopedic appliances and related products	3.03	1
225	Knitting mills	3.26	2
3461+	Stamped and pressed metal products; enameling, japanning and lacquering	3.46	1
3462+			
3463+			
3465			
2891	Printing ink	3.48	1
3581	Domestic laundry equipment	3.51	1
303+	Reclaimed rubber and rubber products, n.e.c.	3.56	2
309			
3871	Watches and clocks	3.92 ^b	2
2251+	Full-fashioned and seamless hosiery mills	3.73	2
2252			
2896	Compressed and liquified gases	3.85	2
2661	Paper bags	3.85	1
2894	Glue and gelatin	3.87	2
2886	Grease and tallow	3.88	2
2895	Carbon black	3.99	2
2895	Wall plaster and board	4.00	2
2893	Perfumes, cosmetics, and other toilet preparations	4.02	1
3955	Carbon paper and inked ribbons	4.10	1
Part of 2297	Jute goods	4.34 ^b	2
2111	Cigarettes	4.40	2
2023	Concentrated milk	4.44	2
233+	Women's clothing	4.46	2
236+			
234			
2072	Chocolate and cocoa products	4.54	2
2842	Cleaning and polishing preparations and blackings, stains and dressings	4.56	1
2611	Pulp mills	4.68	2
264-9	Converted paper products	4.71	2
2022	Natural cheese	4.73	2
2092	Shortenings and cooking oils	4.78 ^b	2
3861	Photographic equipment	4.84	2
2063	Beet sugar	4.90	2
Part of 3999	Fire extinguishers	5.00	2
3271	Concrete products	5.25	2
2292	Lace goods	5.35 ^b	2
203	Canning, preserving and freezing	5.43	2
2899	Chemicals, n.e.c.	5.47	2

(continued)

APPENDIX D

TABLE D-2 (concluded)

SIC. Industry Number	Industry	Percentage Growth 1929-39	Measure Used ^a			
2283	Straw hats	5.84 ^b	2			
2256 + 2259	Knit fabric mills and knitting mills, n.e.c.	5.86	2			
2034 + 2033 + 2035 + 2037				Canned fruits and vegetables, dried and dehydrated fruits and vegetables, pickled fruits and vegetables, frozen foods	5.89	2
°	Aluminum manufactures	6.06	2			
3211 + 3221 + 3229	Glass	6.26 ^b	2			
3411						
2222 + 2225 + 2234				Silk and rayon goods	7.52	2
281 + 282	Industrial chemicals	7.61	2			
2081						
2011-13	Meat packing, wholesale and prepared meats	8.70	2			
°	Chemicals, n.e.c.; rayons and gases	8.77	2			
3951	Pens and mechanical pencils	12.52	2			
3964	Needles, pins, hooks, and eyes	13.50	1			
2061	Raw cane sugar	14.45	2			
2083	Malt	14.50 ^b	2			
3295	Minerals and earths	15.75	1			
2892	Essential oils	16.87	1			
2951	Paving mixtures and blocks	17.33	1			
372	Aircraft	18.59	2			
2282	Wool felt hats and hat bodies	20.80	2			
2825	Synthetic fibers	24.58	2			
208	Beverages	63.78	2			
2084	Wines and brandy	193.8	2			
2085	Distilled liquors, except brandy	1,059.6 ^b	2			

NOTE: For fuller explanation of sources and methods, see text of Appendix D.

^a Measure 1 equals relative change in value of product (deflated for price changes). Source: 1929 and 1939 Censuses of Manufactures. Measure 2 equals relative change in output. Source: Kendrick's output indexes (preliminary worksheets).

^b Growth for period 1929-37.

^c Composition differs somewhat from industry classes in the SIC Code so that no three- or four-digit industries, alone or in combination, contain precisely the activities covered by the indicated categories in the table.

INDUSTRY DATA

TABLE D-3
THE GROWTH OF 3- AND 4-DIGIT INDUSTRIES, 1939-54

SIC. Industry Number	Industry	Percentage Growth		Measure Used ^a
		1939-54	1939-53	
2383	Suspenders and garters	-69.6		1
2443	Cigar boxes	-64.9		1
2216	Finishing wool textiles	-60.7		1
2331	Blouses	-59.5		1
2284	Hatter's furs	-58.6		1
2328	Work shirts	-57.2		1
2445	Cooperage	-56.9		1
2492	Lasts and related products	-54.9		1
2097	Manufactured ice	-49.7		1
2131	Tobacco (chewing and smoking) and snuff	-40.6		1
2371	Fur goods	-38.6		1
2693	Wallpaper	-31.3		1
2442	Rattan and willow ware	-27.1		1
3568	Mechanical stokers	-25.7 ^b		3
3461	Vitreous-enameled products	-25.6		1
2061	Cane sugar (except refining)	-21.4		1
3296	Sand-lime products	-20.4	-20.5	2
2021	Creamery butter	-19.8	-17.7	2
2931	Beehive coke ovens	-18.0		1
2085	Distilled liquor (except brandy)	-17.8 ^c	-15.9 ^d	2
2251	Full-fashioned hosiery mills	-14.6		1
2032	Cured fish	-11.5		1
3982	Cork products	-9.2		1
2326	Hat and cap materials	-9.0		1
315	Leather gloves and mittens	-4.6		1
2493	Mirror and picture frames	-2.4		1
2041 +	Flour and meal and blended and prepared flour			
2045			1.5	1.3
3111	Leather tanning and finishing	1.7 ^c	1.7 ^d	2
221	Woolen and worsted manufactures	1.8	2.1	2
°	Other leather products	4.2	4.2	2
2425	Excelsior mills	5.2		1
2323	Men's and boys' neckwear	5.7		1
2562	Window shades	5.9		1
2063	Beet sugar	6.8	6.0	2
3131	Footwear cut stock	6.8		1
2051	Bread and other bakery products	9.1		1
314	Footwear (except rubber)	11.4 ^e	11.4 ^e	2
3843	Dental equipment and supplies	12.1		1
2251 +	Full-fashioned and seamless hosiery mills			
2252			12.4 ^e	14.0 ^e
2388	Handkerchiefs	13.4		1
2292	Lace goods	13.6		1
2821	Cyclic (coal-tar) crudes	14.3		3
2121	Cigars	15.1	15.7	2
2043	Cereal preparations	18.0		1
2091	Baking powder, yeast, and other leavening compounds	18.3		1

(continued)

APPENDIX D

TABLE D-3 (continued)

SIC. Industry Number	Industry	Percentage Growth		Measure Used ^a
		1939-54	1939-53	
3424	Flour	18.7		1
2041	Flour and other grain mill products	19.1		1
231+ 232	Men's and boys' outerwear	22.2	23.7	2
2223+				
2224+	Cotton goods	22.6	25.6	2
2233				
206	Sugar	24.0	21.4	2
2033	Canning and preserving, except fish	27.7		1
314	Footwear (except rubber)	28.1		1
3586	Measuring and dispensing pumps	30.0		1
295	Paving and roofing materials	30.7		1
2861	Hardwood distillation	36.4 ^b		3
2071	Candy and other confectionery products	37.0		1
2081	Bottled soft drinks	38.4		1
3263	Earthenware food utensils	39.5		1
2252	Seamless hosiery mills	40.2		1
2062	Cane-sugar refining	41.5	37.1	2
3262	Vitreous china food utensils	-42.5		1
205	Bakery products	43.0	38.4 ^a	2
3981	Brooms and brushes	43.8		1
205+ 207	Bakery products and confectionery and related products	43.9 ^e	39.2 ^e	2
3631				
3631	Insulated wire and cable	44.7		1
3121	Industrial leather belting	44.7		1
242+ 243	Sawmills, veneer, and cooperage stock mills, planing mills, plywood mills, excelsior mills	46.7	50.5	2
2271				
2271	Wool carpets, rugs, and carpet yarn	50.2	56.9	2
3351	Copper rolling and drawing	51.3		3
2031	Canned seafood	51.6		1
2222+ 2225+ 2234	Silk and rayon goods	51.7	58.6	2
2841				
3572				
2841	Soap and glycerine	52.0	53.6	2
3572	Typewriters	52.3		3
233+ 234+ 236	Women's clothing	53.2 ^e	56.8 ^a	2
225				
225				
225	Knitting mills	53.3	60.4	2
3192	Saddlery, harnesses, and whips	53.6		1
3255	Clay refractories	54.0		1
2098	Macaroni, spaghetti, vermicelli, etc.	54.0		1
2011-3	Meat packing, wholesale and prepared meats	54.3	48.5	2
2851	Paints, varnishes and lacquers	55.1		3
3251	Brick and hollow tile	55.2		1
3297+ 325	Clay products, n.e.c.	57.2 ^e	57.6 ^e	2
325				

(continued)

INDUSTRY DATA

TABLE D-3 (continued)

SIC. Industry Number	Industry	Percentage Growth		Measure Used ^a
		1939-54	1939-53	
3871	Watches and clocks	57.2		3
2082	Malt liquors	57.3		1
2083	Malt	58.1		1
3872	Watchcases	58.5		1
3851	Ophthalmic goods	59.5		1
2094	Corn products	60.3		1
2052	Biscuits, crackers, and pretzels	60.9		1
3955	Carbon paper and inked ribbons	64.4		1
293	Coke oven products (beehive and by-product)		70.0	2
3312	Steel works and rolling mills	65.6		3
2831	Biological products	66.7 ^b		3
2334	Dresses, dozen price	68.9		1
2023	Concentrated milk	71.2	63.6	2
202	Dairy products	71.7	64.1	2
2111+	} Cigarettes and cigars	73.7	76.7	2
2121				
2261	Finishing textiles, except wool	75.0		1
2951	Paving mixtures and blocks	76.3		1
3254	Sewer pipe	76.8		1
3552	Textile machinery	77.2		1
204	Grain mill products	79.2	70.7	2
3717+	} Motor vehicles and parts	79.4		3
3713				
2072	Chocolate and cocoa products	79.9		1
2952	Roofing felts and coating	82.9 ^e	88.7 ^e	2
227	Carpets, rugs and other floor coverings	84.3	95.6	2
2035	Pickles and sauces	84.4		1
301	Tires and inner tubes	84.9	91.5	2
2651	Envelopes	85.3		1
2881	Cottonseed oil mills	86.4		1
3211	Flat glass	87.6		1
3171	Handbags and purses	88.9		1
2022	Natural cheese	89.6	80.1	2
2322	Men's and boys' underwear	90.0		1
264-269	Converted paper products	90.9	89.5	2
2612	Paper and board mills	91.4	90.0	2
3741	Locomotives and parts	91.9		3
3211+	} Glass	92.8 ^c	93.5 ^d	2
3221+				
3229				
3953	Handstamps and stencils	93.6		1
3323	Steel foundries	93.6		1
2893	Toilet preparations	94.1		1
3842	Surgical appliances and supplies	94.3		1
3274	Lime	96.7 ^f	97.5 ^f	2
373	Ships and boats	96.8 ^e	102.7 ^e	2
2896	Compressed and liquified gases	97.4		1
285	Paints and allied products	98.2 ^c	101.2 ^d	2

(continued)

APPENDIX D

TABLE D-3 (continued)

SIC. Industry Number	Industry	Percentage Growth		Measure Used ^a
		1939-54	1939-53	
3322	Malleable iron foundries	100.4		1
3496	Collapsible tubes	100.7		1
208	Beverages	101.3	90.5	2
2342	Corsets and allied garments	103.3		1
2852	Inorganic color pigments	104.9		1
261	Paper and pulp mills	105.2	103.5	2
2911	Petroleum refining	105.8	113.1	2
3949	Sporting and athletic goods	106.9		1
2321	Men's dress shirts and nightwear	108.2		1
2111	Cigarettes	109.0 ^e	113.4 ^e	2
333	Primary nonferrous metals	109.6	129.4	2
2843	Sulfonated oils and assistants	110.0		3
3411	Tin cans and other tinwear	110.4	116.8	2
3467	Engraving on metal	111.5		1
3583	Sewing machines	111.5		1
2674	Fibre cane, tubes, drums, etc.	111.9		1
3253	Floor and wall tile	113.8 ^b		3
3264	Porcelain electrical supplies	113.8 ^b		3
203	Canning, preserving and freezing	113.8	101.7	2
3651	Electric lamps	114.2		1
3241	Hydraulic cement	114.8	115.8	2
2325	Men's and boys' cloth hats	115.4		1
3491	Metal barrels, drums, and pails	116.5		1
3691	Storage batteries	117.6		1
2515	Mattresses and bedsprings	118.0		1
3984	Candles	119.2		1
371	Motor vehicles and equipment	120.1	127.5	2
3751	Autos, motorcycles, and bicycles	120.3	127.7	2
3293	Gaskets and asbestos insulation	120.9		1
3555	Printing-trades machinery	120.9		1
3341	Secondary nonferrous metals	121.2		3
2561	Window and door screens	121.4		1
3576	Scales and balances	123.2		1
3221	Glass containers	123.8		1
2886	Grease and tallow	123.9		1
2274	Hard surface floor coverings	125.2	142.0	2
2293	Padding and upholstery filling	125.5		1
3425	Hand saws and saw blades	125.7		1
3021	Rubber footwear	125.9		1
3172	Small leather goods	127.6		1
3272	Gypsum products	127.8 ^b		3
2093	Oleomargarine	128.6		1
2024	Ice cream and ices	128.7	115.0	2
3489	Wirework, n.e.c.	129.8		1
3742	Railroad and street cars	130.1	138.1	2
3532	Oil field machinery and tools	133.3 ^g		3
3521	Tractors	135.5		3
3311	Blast furnaces	136.5		3
2611	Pulp mills	142.4	140.1	2

(continued)

INDUSTRY DATA

TABLE D-3 (continued)

SIC. Industry Number	Industry	<i>Percentage Growth</i>		Measure Used ^a
		1939-54	1939-53	
2894	Glue and gelatin	143.7		1
3229	Pressed and blown glass, n.e.c.	144.7		1
3985	Fireworks and pyrotechnics	145.0		1
287	Fertilizers	145.2 ^c	149.7 ^c	2
3551	Food products machinery	145.5		3
3493	Steel springs	145.8		1
2812	Alkalies and chlorine	145.9		3
3471	Lighting fixtures	153.5		1
2387	Belts	153.6		1
3161	Luggage	155.7		1
3582	Laundry and dry-cleaning machinery	161.5		3
2361	Children's dresses	161.8		1
3541	Machine tools	162.3		1
2671	Paperboard boxes	165.6		1
3444	Sheet-metal work	165.7		1
3522	Farm machinery	168.4		3
2044	Rice cleaning and polishing	170.0		1
3231	Products of purchased glass	179.7 ^e		3
2363	Children's coats	185.9		1
374	Locomotive and parts, railroads and street cars	187.7 ^e	199.2 ^e	2
3562	Elevators and escalators	187.9		3
2534	Public-building furniture	191.6		1
2042	Prepared animal feeds	192.2		1
3261	Vitreous plumbing fixtures	195.0		1
3561	Pumps and compressors	196.3		3
3554	Paper industries machinery	198.0		1
2691	Die-cut paper and board	202.7		1
3566	Power-transmission equipment	204.1		3
3441	Structural and ornamental work	209.4		1
3614	Motors and generators	216.5		3
2826	Explosives	217.7		1
3321	Gray-iron foundries	225.3		1
2842	Cleaning and polishing products	232.2		1
3861	Photographic equipment and supplies	240.1		3
3723+ 3729	} Aircraft propellers and equipment	241.1		3
3612	Carbon and graphite products	242.4		1
2895	Carbon black	242.5		1
3392	Wire drawing	243.1		1
3391	Iron and steel forgings	244.2		3
2661	Paper bags	244.4		1
2641	Paper coating and glazing	248.2		1
3841	Surgical and medical instruments	256.5		3
3492	Safes and vaults	258.3		1
3542	Metalworking machinery	261.9		3
3466	Galvanizing	266.7		1
3553	Woodworking machinery	269.7		3
3031	Reclaimed rubber	279.0		1

(continued)

APPENDIX D

TABLE D-3 (concluded)

SIC. Industry Number	Industry	Percentage Growth		Measure Used ^a
		1939-54	1939-53	
3641	Engine electrical equipment	280.2		3
3585	Refrigeration machinery	280.6		3
2887	Fatty acids	283.3 ^b		3
3361	Nonferrous foundries	289.5		3
3271	Concrete products	293.0	295.3	2
3571	Computing and related machines	297.4		3
3715	Truck trailers	303.2		3
281+ 282	} Industrial chemicals	309.2	318.8	2
3611	Wiring devices and supplies	313.9		3
3519	Internal combustion engines	324.4		1
3099	Rubber industries, n.e.c.	330.3		1
3465	Enameling and lacquering	332.1		1
3821	Mechanical measuring instruments	333.1		3
3565	Industrial trucks and tractors	338.2		3
2825	Synthetic fibers	345.2	355.9	2
2694	Pulp goods, pressed and molded	354.5		1
3352	Aluminum rolling and drawing	355.0		3
3621	Electrical appliances	361.0		3
3531	Construction and mining machinery	361.6 ^c		3
2853	Whiting and fillers	366.7		3
3613	Electrical measuring instruments	372.8		1
3313	Electrometallurgical products	373.9		3
3581	Domestic laundry equipment	376.3		1
3443	Boiler shop products	378.1		1
3564	Blowers and fans	397.4		3
3664	Telephone and telegraph equipment	404.3		3
3468	Plating and polishing	427.7		1
3615	Transformers	434.3		3
3563	Conveyors	460.4		3
3831	Optical instruments and lenses	465.4		3
3567	Industrial furnaces and ovens	466.7		3
3617	Electrical welding apparatus	489.5		3
3616	Electrical distribution and control apparatus	519.3		3
2823	Plastic materials	522.0		3
3811	Scientific instruments	528.2		3
3663	Phonograph records	650.0		3
3971	Plastic products, n.e.c.	656.4		1
3661	Radios and related products	680.2		3
3511	Steam engines and turbines	681.6		3
2834	Pharmaceutical preparations	682.3 ^c		3
2273	Carpets and rugs, except wool	693.5		1
2045	Flour mixes	741.9		1
3662	Electron tubes	753.5		3
3716	Automobile trailers	783.3		3
2883	Soybean oil mills	1,028.0		1
3721	Aircraft	1,314.3		3
372	Aircraft	1,543.1	1,638.1	2
3722	Aircraft engines	1,879.6		3
2833	Medicinal chemicals	2,259.1 ^c		3

INDUSTRY DATA

NOTES TO TABLE D-3

For fuller explanation of sources and methods, see text of this appendix.

^a Measure 1 equals relative change in value of product (deflated for price changes). Source: 1939 and 1954 censuses of manufactures. Measure 2 equals relative change in output. Source: Kendrick's output indexes (preliminary worksheets). Measure 3 equals relative change in number of production workers (deflated for productivity changes). Source: 1939 and 1954 Censuses of Manufactures.

^b 1954 number of production workers estimated from 1952 number of production workers.

^c 1937-54.

^d 1937-53.

^e 1952 output index number used.

^f 1953 output index number estimated.

^g 1954 number of production workers estimated from 1953 number of production workers.

APPENDIX D

TABLE D-4
AVERAGE ASSET SIZE OF FIRMS IN 101 MANUFACTURING INDUSTRIES, 1947

Industry	Average Size of Firm (assets in thousands of dollars)
Bakery products	469.90
Confectionery	838.31
Canning	789.61
Meat products	1,387.23
Grain mill products	857.59
Cereal preparations	3,147.77
Dairy products	636.77
Sugar	6,887.92
Miscellaneous foods	640.82
Breweries	2,386.59
Distilled and rectified liquor	4,715.02
Wines	482.85
Nonalcoholic beverage	199.25
Tobacco	8,783.94
Cotton manufactures	2,291.70
Woolen and worsted	1,352.91
Rayon and silk	1,516.57
Knit goods	423.20
Hats, excluding cloth and millinery	412.43
Carpets	2,142.33
Dyeing and finishing	521.93
Miscellaneous textile	814.08
Men's clothing	353.68
Women's clothing	138.95
Furs	75.61
Millinery	50.65
Miscellaneous apparel	175.05
Tanning, currying and finishing	885.81
Footwear, excluding rubber	505.59
Miscellaneous leather	130.49
Logging camps and miscellaneous	631.94
Planing mills	380.05
Wooden containers	295.04
Furniture	297.20
Partitions and fixtures	141.66
Miscellaneous furniture	268.15
Pulp, paper and paperboard	5,137.76
Miscellaneous paper	572.55
Newspapers	553.63
Periodicals	427.24
Books	363.88
Commercial printing and lithographing	192.92
Miscellaneous printing	143.24
Paints and varnishes	779.54
Industrial chemicals	5,160.56
Soap and glycerin	1,951.42
Drugs and toilet preparations	492.63
Oils	2,151.55
Rayon	32,601.56

(continued)

INDUSTRY DATA

TABLE D-4 (continued)

Industry	Average Size of Firm (assets in thousands of dollars)
Plastic materials	509.12
Fertilizers	976.82
Miscellaneous chemicals	586.31
Petroleum refining	38,153.14
Miscellaneous petroleum and coal	2,433.89
Tires and tubes	27,325.60
Miscellaneous rubber	624.96
Pottery and porcelain	519.66
Concrete	314.45
Cut stone	139.04
Structural clay	447.85
Glass	1,041.38
Cement	4,250.23
Miscellaneous stone, clay, and glass	1,133.64
Blast furnaces and rolling mills	37,672.22
Structural steel	426.64
Tin cans	5,698.83
Hand tools, cutlery, etc.	665.20
Heating apparatus	885.22
Miscellaneous iron and steel	608.48
Nonferrous metals, basic	5,421.96
Miscellaneous nonferrous	415.51
Electrical equipment for public utilities, etc.	1,896.65
Automotive electrical equipment	1,369.00
Communications equipment	2,012.03
Electrical appliances	696.58
Miscellaneous electrical equipment	1,374.43
Engines and turbines	2,814.56
Agricultural machinery	2,902.87
Special industry machinery	850.54
General industry machinery	647.02
Metalworking machinery	529.27
Construction and mining machinery	1,821.55
Office and store machinery	2,617.85
Household and service industry machinery	1,544.67
Miscellaneous machinery	1,201.34
Motor vehicles, including truck bodies and industrial trailers	10,356.90
Motor vehicle parts and accessories	1,627.20
Railroad and railway equipment	8,309.94
Aircraft and parts	5,019.51
Ship and boat building	878.35
Motorcycles and bicycles	904.21
Miscellaneous transport equipment	159.22
Firearms	1,442.33
Ammunition	13,426.80
Tanks	90.33
Sighting and fire control equipment	1,930.13
Ordnance n.e.c.	661.14
Clocks and watches	1,355.38

(continued)

APPENDIX D

TABLE D-4 (concluded)

Industry	Average Size of Firm (assets in thousands of dollars)
Jewelry, excluding costume	258.50
Matches	3,959.90
Miscellaneous manufacturing	275.69

SOURCE: Internal Revenue Service, *Source Book for Statistics of Income*, 1947.

INDUSTRY DATA

TABLE D-5
AMPLITUDE OF CYCLICAL FLUCTUATIONS; 1923-41 AND 1947-55

	1923-41	1947-55
<i>All Manufacturing</i>	14.97	7.06
<i>Food products</i>	3.85	1.70
Meat products ^a	8.09	5.19
Dairy products	4.91	3.35
Butter	3.03	8.26
Cheese	6.57	4.97
Concentrated milk	3.82	2.99
Ice cream	6.72	4.13
Canned and frozen foods	—	4.86
Grain mill products	—	1.94
Wheat flour	2.32	4.07
Cereals and feeds	—	2.90
Sugar	—	8.66
Cane sugar (meltings)	5.35	7.08
Beet sugar	—	12.98
Confectionery	—	2.36
Miscellaneous foods ^a	6.29	1.53
<i>Beverages</i>	—	2.67
Soft drinks	—	5.81
Alcoholic beverages ^b	8.49	3.27
Malt liquors ^b	7.50	2.10
Liquor distilling	—	20.38
Whiskey ^b	21.19	—
Other distilled spirits	14.86	—
Rectified spirits	10.44	—
Liquor bottling	—	7.11
<i>Tobacco manufactures</i>	3.57	2.16
Cigarettes	5.74	3.11
Cigars	3.44	2.47
Tobacco and snuff	1.45	—
<i>Textile mill products</i>	12.56	8.15
Textile fabrics	12.44	—
Cotton fabrics (consumption)	12.82	7.52
Rayon and silk (deliveries)	9.88	—
Silk (and nylon after 1940)	6.76	—
Rayon	15.08	—
Woolen textiles	16.64	12.18
Apparel wool ^a	19.03	9.60
Woolen yarn	12.62	—
Worsted yarn	21.61	—
Wool fabrics	17.11	12.09
Knit goods	—	5.06
Hosiery	—	3.16
Full fashioned	—	3.36
Seamless	—	4.90
Knit garments	—	8.44
Floor coverings	—	11.81
Carpets ^a	22.10	15.86
Cotton and synthetic fabrics	—	8.02
Synthetic fabrics	—	12.71
Fabric finishing	—	5.71

(continued)

APPENDIX D

TABLE D-5 (continued)

	1923-41	1947-55
<i>Apparel and fabricated textiles</i>	—	4.51
Men's outerwear	—	6.17
Suits and coats	—	11.14
Suits	—	11.38
Outercoats	—	12.91
Shirts and work clothing	—	6.42
Women's outerwear	—	4.26
Suits and coats	—	7.51
Miscellaneous apparel and allied products	—	5.04
<i>Lumber and products</i>	—	7.87
Lumber	9.05	7.09
Millwork and plywood	—	9.89
Millwork	—	10.47
Softwood plywood	—	8.61
Wooden containers	—	5.22
<i>Furniture and fixtures</i>	12.47	8.55
Household furniture	—	9.92
Fixtures and office furniture	—	6.13
<i>Paper and products</i>	9.30	5.93
Pulp and paper	9.10	6.78
Wood pulp	8.77	6.32
Paper and board	9.16	6.61
Printing paper	7.90	5.34
Fine paper	11.13	7.13
Tissue (sanitary)	7.54	6.16
Paperboard	10.09	8.16
Wrapping	7.40	—
Newsprint production	4.61	—
Coarse paper	—	7.26
Building paper and board	—	9.91
Miscellaneous paper products	—	6.66
Paperboard containers	10.79	7.15
<i>Printing and publishing</i>	8.16	3.91
Newsprint consumption	6.11	3.32
Job printing and periodicals	—	4.34
<i>Chemicals</i>	8.89	5.23
Industrial chemicals	—	9.53
Basic inorganic chemicals	—	11.67
Industrial organic chemicals	—	10.79
Plastic materials	—	7.39
Synthetic rubber	—	19.62
Synthetic fibers	—	11.40
Miscellaneous organic chemicals	—	9.37
Vegetable and animal oils	—	6.77
Vegetable oils	—	2.77
Grease and tallow	—	8.41
Soap and allied products	—	4.53
Paints	—	7.19
Fertilizers	—	2.47

(continued)

INDUSTRY DATA

TABLE D-5 (continued)

	1923-41	1947-55
<i>Petroleum and coal products</i>	8.01	6.02
Petroleum refining	6.43	5.33
Gasoline	5.25	5.63
Automotive	—	5.64
Aviation	—	6.05
Fuel oil	6.33	7.43
Distilled	—	10.42
Residual	—	3.87
Lubricating oil	7.54	6.59
Kerosene	5.29	10.02
Coke	16.58	14.39
By-product	13.92	—
Beehive	32.77	—
Asphalt roofing and siding	—	9.41
<i>Rubber products</i>	10.60	11.98
Rubber consumption	10.70	—
Tires and tubes	10.91	12.31
Auto tires	—	13.81
Truck and bus tires	—	14.65
Miscellaneous rubber products	—	11.83
<i>Leather and products</i>	9.08	6.41
Leather (tanning, etc.)	12.48	6.76
Shoes (footwear)	8.65	5.90
<i>Stone, clay, and glass products</i>	12.77	7.94
Cement	10.94	9.32
Structural clay ^a	12.79	7.30
Glass products ^{a, c}	11.36	7.48
Flat glass ^a	20.55	11.18
Glass containers	11.07	7.11
Home glassware and pottery	—	6.02
Concrete and plaster products	—	8.45
Miscellaneous stone and earth mfs.	—	10.96
<i>Primary metals</i>	—	14.73
Ferrous metals	—	15.78
Pig iron and steel	18.67	15.72
Pig iron	20.18	16.18
Steel	18.69	17.40
Carbon steel	—	15.48
Alloy steel	—	21.51
Ferrous castings and forgings	—	13.66
Iron and steel castings	—	14.99
Steel forgings	—	17.99
Nonferrous metals ^a	15.98	12.18
Primary nonferrous metals	13.35	4.09
Copper smelting	13.63	9.38
Copper refining	—	10.10
Lead ^c	19.16	6.35
Zinc	12.59	7.79
Tin (consumption)	24.98	—
Copper deliveries	19.59	—
Aluminum	—	4.80

(continued)

APPENDIX D

TABLE D-5 (concluded)

	1923-41	1947-55
Secondary nonferrous metals	—	13.43
Nonferrous shapes and castings	—	14.29
Copper mill shapes	—	12.59
Aluminum mill shapes	—	18.99
Nonferrous castings	—	16.04
<i>Fabricated metal products</i>	—	7.66
Structural metal	—	7.42
Furnaces, ranges, etc.	—	15.41
Tin cans	—	4.50
Stampings and miscellaneous	—	9.46
<i>Machinery, All</i>	11.89	16.67
<i>Machinery, non-electrical</i>	—	8.93
Farm and industrial machinery	—	8.31
Farm machinery	—	10.83
Industrial and commercial machinery	—	8.64
Machine tools and presses	—	10.39
Appliances (laundry and refrig.)	—	19.13
<i>Electrical machinery</i>	—	6.94
Electrical apparatus and parts	—	8.35
Radio and TV sets	—	13.29
<i>Transportation equipment</i>	20.05	10.80
Motor vehicles and parts	19.62	18.45
Autos	—	22.48
Trucks	—	15.81
Light	—	12.58
Medium	—	17.16
Heavy	—	23.18
Truck trailers	—	26.98
Vehicle parts	—	—
Aircraft ^{a, d}	27.70	20.42
Ships and boats	16.44	9.49
Railroad equipment	24.63	13.58
Locomotives	32.11	—
Railroad cars	24.10	20.02
<i>Instruments and miscellaneous mfg.</i>	—	7.34
Instruments	—	7.62
Miscellaneous manufacturing	—	7.15

SOURCE: The sources are indicated in the text of this appendix.

^a Not identical composition in the two periods.

^b 1934-41 instead of 1923-41.

^c 1926-41 instead of 1923-41.

^d 1931-41 instead of 1923-41.

INDUSTRY DATA

TABLE D-6
NONPRIMARY EMPLOYMENT AS A PERCENTAGE OF PRIMARY EMPLOYMENT
FOR 86 MANUFACTURING AND MINING INDUSTRIES, 1954^a

Industry	Nonprimary Employment Primary Employment (per cent)	Industry	Nonprimary Employment Primary Employment (per cent)
Metal mining	15.60	Periodicals	12.79
Anthracite mining	02.36	Books, misc. publishing and greeting cards	07.30
Bituminous coal and lignite mining	07.48	Commercial printing and lithographing	03.42
Crude petroleum and natural gas extraction	03.87	Bookbinding and printing trade services	01.37
Nonmetallic minerals, except fuels, mining	07.24	Inorganic and organic chemicals	41.21
Meat-packing plants	22.34	Drugs and medicines	23.17
Dairy products	08.94	Soap and related products	26.60
Canned and frozen foods	04.75	Paints and allied products, gum and wood chemicals	50.79
Grainmill products	20.29	Fertilizers	55.98
Bakery products	06.09	Vegetable and animal oils	24.58
Candy and related products	07.64	Chemical products, n.e.c.	22.00
Bottled soft drinks	00.95	Petroleum refining	24.08
Beverages, except bottled soft drinks	08.10	Integrated petroleum extrac- tion and refining	54.41
Tobacco manufactures	03.58	Other petroleum and coal products	29.50
Woolen and worsted manufactures	02.84	Rubber products	35.29
Yarn and thread mills, broad- woven fabrics, and finishing textiles	12.81	Footwear (except rubber)	09.89
Knitting mills	93.34	Leather and leather products except footwear	03.74
Carpets and rugs	75.31	Glass products	15.28
Other textile mill products	08.71	Cement, hydraulic	02.28
Men's and boys' clothing	03.17	Structural clay products	05.08
Women's and children's clothing (except millinery and fur goods)	01.55	Concrete and plaster products	18.92
Millinery, fur goods, and misc. apparel	02.56	Other metallic mineral products	13.77
Fabricated textiles, n.e.c.	02.98	Blast furnaces and steel mills	48.47
Logging and lumber and basic products	06.17	Iron and steel foundries	13.43
Millwork and related products	09.40	Nonferrous smelting, refining, rolling and nonferrous foundries	53.57
Other wood products	05.13	Primary metal industries, n.e.c.	15.20
Household furniture	03.73	Tin cans and other tinware	42.75
Furniture and fixtures, except household furniture	05.39	Cutlery, hand tools and hardware	13.60
Pulp, paper and board	40.97	Heating and plumbing equipment	25.79
Paperboard containers	18.30	Structural metal products	09.37
Other pulp, paper and products	17.38	Metal stamping and coating	07.14
Newspapers	03.43		

(continued)

APPENDIX D

TABLE D-6 (concluded)

Industry	Nonprimary Employment Primary Employment (per cent)	Industry	Nonprimary Employment Primary Employment (per cent)
Other fabricated metal products	10.08	Other electrical machinery, equipment and supplies	25.22
Engines and turbines	27.16	Motor vehicles and equipment	49.96
Tractors and farm machinery	43.71	Aircraft	04.49
Construction and mining machinery	25.21	Aircraft parts	37.01
Metalworking machinery	09.52	Ships and boats	12.22
Special-industry machinery, n.e.c.	11.20	Other transportation equipment	68.39
General industrial machinery	17.63	Scientific and mechanical measuring instruments	25.27
Office and store machines	16.00	Optical, medical, and ophthalmic goods	14.19
Service and household machines	22.89	Photographic equipment	42.83
Misc. machinery parts	12.58	Watches and clocks	23.12
Electrical industrial apparatus	80.61	Misc. manufactures (incl. ordnance and accessories)	09.78
Communication equipment	21.88		

SOURCE: Data derived from *Company Statistics*, Table 2.

^a For definitions of primary and nonprimary employment, see Chapter 2.

INDUSTRY DATA

TABLE D-7
NONPRIMARY EMPLOYMENT AS A PERCENTAGE OF PRIMARY EMPLOYMENT
FOR 34 NONMANUFACTURING INDUSTRIES, 1954^a

Industry	Nonprimary Employment Primary Employment (per cent)
<i>Public warehouses</i>	01.25
<i>Wholesale trade</i>	
Food products wholesalers	04.01
Drugs, chemicals, allied prod. wholesalers	07.19
Automotive wholesalers	01.68
Electrical, electronics appliance distributors	02.00
Hardware, plumbing, heating goods wholesalers	03.23
Lumber, construction materials distributors	03.66
Machinery, equipment supplies distributors	03.10
Miscellaneous merchant wholesalers	04.75
Petroleum bulk, plant, terminals, and LP gas facilities	07.54
Merchandise agents, brokers	01.81
Assemblers of farm products	03.06
<i>Retail trade</i>	
Grocery stores	04.92
Food stores except grocery stores	01.66
Eating, drinking places	01.03
General merchandise group, except variety stores	01.13
Variety stores	00.60
Shoe stores	07.17
Apparel, accessories except shoe stores	01.74
Furniture, home furnishings, appliance dealers	01.60
Automotive group and gasoline service stations	00.71
Lumber, building material, hardware, farm equipment dealers	02.20
Drug stores, proprietary stores	00.95
Other retail stores	02.13
Nonstore retailers	12.44
<i>Service trades</i>	
Personal services	00.30
Advertising	01.10
Business services, except accounting, auditing, bookkeeping and advertising	01.20
Automobile repair shops, garages	00.62
Miscellaneous repair services	01.74
Motion picture theaters	03.78
Motion picture production and distribution	01.72
Amusement, recreation except motion pictures	00.78
Hotels, motels, tourist courts, camps	00.79

SOURCE: Data derived from *Company Statistics*, Table 2.

^a For definitions of primary and nonprimary employment, see Chapter 2.

APPENDIX D

TABLE D-8
NONPRIMARY EMPLOYMENT AS A PERCENTAGE OF EXTERNAL EMPLOYMENT
FOR 86 MANUFACTURING AND MINING INDUSTRIES, 1954^a

Industry	Nonprimary Employment External Employment (per cent)	Industry	Nonprimary Employment External Employment (per cent)
Metal mining	14.6	Newspapers	361.9
Anthracite mining	38.8	Periodicals	169.0
Bituminous coal and lignite mining	27.3	Books, miscellaneous pub- lishing and greeting cards	105.3
Crude petroleum and natural gas extraction	8.6	Commercial printing and lithographing	56.8
Nonmetallic minerals (except fuels) mining	30.4	Bookbinding and printing trade services	22.7
Meat-packing plants	1961.1	Inorganic and organic chemicals	164.3
Dairy products	177.9	Drugs and medicines	124.2
Canned and frozen foods	53.2	Soap and related products	257.0
Grainmill products	176.5	Paints and allied products; gum and wood chemicals	129.2
Bakery products	76.9	Fertilizers	109.3
Candy and related products	63.7	Vegetable and animal oils	61.4
Bottled soft drinks	12.6	Chemical products, n.e.c.	71.4
Beverages, except bottled soft drinks	338.2	Petroleum refining	2.2
Tobacco manufactures	750.1	Integrated petroleum extraction and refining	—
Woolen and worsted manufactures	12.9	Other petroleum and coal products	14.6
Yarn and thread mills, broad-woven fabrics, and finishing textiles (except wool)	182.5	Rubber products	390.0
Knitting mills	79.8	Footwear (except rubber)	527.1
Carpets and rugs	244.5	Leather and leather products except footwear	28.4
Other textile mill products	67.0	Glass products	254.2
Men's and boys' clothing	72.2	Cement, hydraulic	14.7
Women's and children's clothing (except millinery and fur goods)	71.3	Structural clay products	42.5
Millinery, fur goods, and miscellaneous apparel	55.9	Concrete and plaster products	120.4
Fabricated textiles, n.e.c.	15.8	Other nonmetallic mineral products	55.5
Logging and lumber and basic products	111.5	Blast furnaces and steel mills	559.1
Millwork and related products	97.7	Iron and steel foundries	40.6
Other wood products	32.7	Nonferrous smelting, refining, rolling and nonferrous foundries	284.1
Household furniture	43.4	Primary metal industries, n.e.c.	19.7
Furniture and fixtures, except household furniture	66.6	Tin cans and other tinware	258.1
Pulp, paper, and board	152.9	Cutlery, hand tools, and hardware	31.9
Paperboard containers	66.3	Heating and plumbing equipment	119.2
Other pulp, paper and products	41.6	Structural metal products	43.1

(continued)

INDUSTRY DATA

TABLE D-8 (concluded)

Industry	Nonprimary Employment External Employment (per cent)	Industry	Nonprimary Employment External Employment (per cent)
Metal stamping and coating	31.9	Other electrical machinery, equipment and supplies	31.0
Other fabricated metal products	44.2	Motor vehicles and equip- ment	617.3
Engines and turbines	20.5	Aircraft	88.8
Tractors and farm machinery	377.5	Aircraft parts	57.9
Construction and mining machinery	69.2	Ships and boats	46.1
Metalworking machinery	75.1	Other transportation equipment	75.3
Special-industry machinery, n.e.c.	79.8	Scientific and mechanical measuring instruments	70.1
General industrial machinery	69.3	Optical, medical, and ophthalmic goods	94.7
Office and store machines	567.7	Photographic equipment	587.9
Service and household machines	33.8	Watches and clocks	238.9
Miscellaneous machinery parts	66.1	Miscellaneous manufactures (including ordnance and accessories)	35.8
Electrical industrial apparatus	408.0		
Communication equipment	102.0		

SOURCE: Data derived from *Company Statistics*, Table 2.

^a For definition of nonprimary employment, see Chapter 2. For definition of external employment, see Chapter 7.

