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Appendix A

Sources and Processing of Data

The principal data studied are Department of Commerce end-of-month estimates of the book value of manufacturers stocks.¹ Series for total inventories covered the 3 comprehensive groupings (total manufacturing, durable-goods industries, nondurable-goods industries) and 16 industry groups. Stage-of-fabrication series covered the comprehensive groupings and nine industry groups. All data were deflated by the author for the period 1947-56. Only material for the comprehensive groupings were studied for the period after 1956. These more recent data were not deflated. Prior to dating turns in the inventory series, the end-of-month figures were centered by use of a 2-month moving average.

These data comprised the principal source for the analysis in chapters 3 through 7. In addition, chapters 2 and 3 make use of Department of Commerce inventory data for total nonfarm, total manufacturing, and durable-goods industries, deflated (in 1954 dollars) by the Department for purposes of computing the inventory investment component of gross national product. These figures cover the period 1947 to date and are roughly comparable to those deflated by the author; they differ only in that coverage and procedures used in deflation were not identical.

Finally, activity (shipments or output) and finished-goods inventory data for 25 commodities were analyzed in chapter 5. These figures, shown in table 21, required seasonal adjustment only.

DEFLATION PROCEDURE

The approach used in deflating the book value series was as follows:

1. In constructing deflators the Bureau of Labor Statistics Wholesale Price Indexes were used. No deflation was attempted before 1947 since the Wholesale Price Indexes were revised in that year.

¹ The Department of Commerce book value series were as follows:

<i>Total-stocks series</i>	<i>Stage-of-fabrication series</i>
Total manufacturers.....	Total manufacturers.
Durable-goods manufacturers.....	Durable-goods manufacturers.
Nondurable-goods manufacturers.....	Nondurable-goods manufacturers.
Primary metals.....	Primary metals.
Fabricated metals.....	
Electrical machinery.....	Total machinery.
Machinery, excluding electrical.....	
Motor vehicles and parts.....	Total transportation equipment.
Transportation equipment, excluding motor vehicles.....	
Stone, clay, and glass products.....	Stone, clay, and glass products.
Food and kindred products.....	Food and beverages.
Textile mill products.....	
Apparel.....	
Leather and leather products.....	
Paper products.....	Paper products.
Chemical products.....	Chemical products.
Printing and publishing.....	
Petroleum and coal products.....	Petroleum and coal products.
Rubber products.....	Rubber products.

2. Inventories were deflated separately for each stage of fabrication in both the durables and nondurables classifications. The more aggregative series (i.e., total manufacturers, durable-goods and nondurable-goods industries; total purchased materials, total goods in process, total finished goods) were secured by adding the appropriate deflated components.

Purchased-materials and finished-goods deflators were built up from deflators constructed separately for each industry. In combining these, the weights assigned were based on the proportions of the stage-of-fabrication inventory held by the various industries according to census data.² (See table A-1 for industry weights.) The goods-in-process deflators were constructed by averaging the purchased-materials and finished-goods deflators.

3. Purchased-materials industry deflators were constructed by examining materials inputs to each industry as revealed by the Bureau of Labor Statistics interindustry study for the year 1947, selecting and weighing price indexes accordingly. Code numbers and weights of the price indexes chosen are presented in table A-2. Finished-goods industry deflators were constructed by examining the composition of finished stocks within each industry according to the 1947 Census of Manufactures and selecting and weighing the price indexes accordingly. Code numbers and weights of the price indexes are shown in table A-2.

4. Prior to combining the industry deflators the months covered by the turnover period³ were averaged for each industry. Thus, if the turnover period were 3 months, the adjusted industry deflator for the month of March would be secured by averaging the deflators in the months of January, February, and March.

5. There were difficulties in making allowance for the LIFO component of stocks and for the fact that certain companies make cost or market adjustments at the end of fiscal periods. In general, the procedure used was to remove, monthly or quarterly, a fixed LIFO component and deflate the remainder, adding the LIFO component to the deflated portion to secure the final deflated stock value. The value of the LIFO component was taken from published estimates by Daly in the Survey of Current Business (July 1953, p. 17). No cost or market adjustments could be made in monthly series, but year-end deflations were checked with comparable National Income Division deflations for which cost of market adjustments had been made.

6. The total stocks series for 16 individual industries, which are discussed in chapter 3, were deflated in a somewhat different manner; deflators were constructed as described above but with assumptions of a fixed composition of total stock by stage of fabrication.

² Finished-goods weights were based upon the composition of finished goods according to the 1947 Census of Manufactures. Purchased-materials weights were derived from 1953 Annual Survey of Manufacturers' material.

³ A turnover period is a period of time during which the stocks held as of a given date are presumed to have been accumulated. Information concerning the duration of these periods for the several industries was secured from the Department of Commerce.

TABLE A-1.—Weights and turnover periods assigned to industry deflators

DURABLE-GOODS INDUSTRIES

Industry	Turnover period (in months)	Weights	
		Purchased materials	Finished goods
Primary metals.....	4	20.6	15.3
Fabricated metal products.....	4	16.7	14.4
Total machinery.....	6	29.2	41.0
Total transportation.....	4	21.2	10.3
Lumber products.....	4	8.1	9.5
Furniture and fixtures.....	4		3.0
Stone, clay, and glass.....	4		6.5

NONDURABLE-GOODS INDUSTRIES

Food and beverage.....	3	22.7	41.0
Tobacco products.....	6 (3) ¹	13.6	9.9
Textile mill products.....	4	12.2	8.0
Apparel.....	4	8.8	9.4
Leather products.....	4	2.9	2.5
Paper.....	3	9.8	2.6
Chemicals and allied products.....	4	19.8	13.7
Petroleum and coal products.....	3	6.8	9.6
Rubber and rubber products.....	4	3.4	3.3

¹ Figure enclosed by parenthesis relates to finished-goods turnover period; other figure relates to purchased materials turnover period only.

TABLE A-2.—Index numbers and weights used in constructing industry deflators
DURABLE-GOODS INDUSTRIES

Industry	Purchased materials		Finished goods	
	Index numbers	Weight	Index numbers	Weight
Primary metals.....	10-11	6	10-14	59
	05-2	10	10-15	11
	10-13	27	10-22	9
	10-12	8	10-24	9
	10-14	29	10-25	12
	10-23	4		
	10-22	13		
Fabricated metals products.....	10-24	3		
	10-14	85	10-4	28
	10-25	15	10-6	28
Total machinery.....			10-7	21
	06-21	3	10-8	27
	06-73	2	11-7	17
	08	5	12-5	8
	10-14	25	11	63
	10-15	24	12-4	12
	10-2	26		
Total transportation equipment.....	10-81	8		
	10-82	7		
	03	4	11-8	68
	07-2	8	10-4	9
	08	6	11-54	10
	10-14	32	11-7	13
	10-15	26		
Stone, clay, and glass products.....	10-2	9		
	10-4	5		
	10-82	10		
	09-3	13	13-1	8
	13-1	18	12-63	20
	13-2	24	13-4	13
Lumber and lumber products, furniture and fixtures.....	13-4	14	12-61	7
	13-7	31	13-3	18
			13-7	27
			13-2	7
	08	100	08	76
		12-1	24	

NONDURABLE-GOODS INDUSTRIES

Food and beverages.....	01-3	9	02-2	20
			02-3	5
	01-82	5	02-4	24
	01-1	14	02-1	8
	01-2	47	02-5	10
	02-5	14	14-4	25
	02-71	11	02-8	8
Tobacco.....	01-82	100	14-1	100
Textile mill products.....	01-4	78	03-1	48
			03-2	30
			03-3	22
Apparel.....	03-31	22		
	03-12	40		
	03-24	38	03-5	100
	03-33	22		
Leather and products.....	04-2	100	04-3	65
Paper and allied products.....	09-1	94	04-4	35
	09-2	6	09-3	34
Chemicals and allied products.....			09-5	22
			09-4	44
	06	25	06-1	27
	06-3	4	06-3	17
	06-4	18	06-4	14
			06-71	9
			06-4	14
	06-7	5	06-21	14
	06-22	5	06-7	14
	01-73	28	06-5	5
	05-56	5		
05-20	5			
09-7	5			
Petroleum and coal products.....	05-56	65	(1)	95
	05-12	35	05-2	5
Rubber products.....	07-1	71	07-2	61
	03-12-76	29	07-3	39

1 05-5 (weight 100) minus 05-56 (weight 18) divided by 82.