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Volume Author/Editor: Victor R. Fuchs, assisted by Irving F. Leveson

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Chapter Author: Victor R. Fuchs

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APPENDIX G

MEASURES OF OUTPUT AND INPUT IN DETAILED SERVICE INDUSTRIES

Selected Services, Industry Classification

Two types of adjustments were necessary to achieve comparability of industries over time. The first consisted of shifting detailed kinds of business between industries. This was necessary because of modifications in the industrial classification adopted by the Census Bureau. The other adjustment concerned the inclusion of units other than stores in retail trade. Nonstore retailers, consisting of mail-order houses, vending-machine operators, and house-to-house selling organizations, had to be allocated by kind of business, beginning in 1954, when they were first shown separately. Administrative offices, warehouses, and auxiliaries, also shown separately, were included in each year. The eighteen selected service industries as defined in this paper are described in the following paragraphs, and the Standard Industrial Classification codes used in the 1963 *Census of Business* are indicated.

BARBER SHOPS (SIC 724). barber shops.

BEAUTY SHOPS (SIC 723). beauty shops and combination barber and beauty shops.

LAUNDRIES (SIC 7211, 7212, 7213, 7214, 7215). power laundries, industrial laundries, linen supply, diaper service, self-service laundries, and self-service dry cleaning. (Self-service dry cleaning was included in laundries because separate information was not available prior to 1963.)

DRY CLEANING (SIC 7216, 7217). cleaning and dyeing plants (except rug cleaning), and cleaning and pressing shops.

SHOE REPAIR (SIC 725). shoe repair, shoeshine, and hat cleaning establishments.

AUTO REPAIR (SIC 75). auto repair shops, parking, auto and truck rentals, and auto laundries.

MOTION PICTURE THEATERS (SIC 783). regular motion picture theaters and drive-ins.

HOTELS AND MOTELS (SIC 7011). year-round hotels, seasonal hotels, motels, tourist courts, and motor hotels.

LUMBER, BUILDING MATERIALS, HARDWARE, FARM EQUIPMENT DEALERS (SIC 52). lumber yards, building materials dealers, heating and plumbing equipment dealers, paint, glass, and wallpaper stores, electrical supply stores, hardware stores, farm equipment dealers.

GENERAL-MERCHANDISE GROUP STORES (SIC 53, excluding part of nonstore retailers). department stores, limited-price variety stores, general-merchandise stores.

FOOD STORES (SIC 54). groceries, delicatessens, meat markets, fish markets, fruit stores, vegetable markets, candy, nut, and confectionery stores, dairy products stores, retail bakeries, egg and poultry stores.

AUTOMOTIVE DEALERS (SIC 55, excluding 554). passenger car dealers, tire, battery, and accessory dealers, home and auto supply stores, aircraft, motorcycle, boat, and household trailer dealers. (Dealers primarily engaged in selling trucks are classified under wholesale trade.)

GASOLINE SERVICE STATIONS (SIC 554). gasoline service stations.

APPAREL, ACCESSORY STORES (SIC 56). men's, women's, and children's wear stores, custom tailors, specialty stores, furriers, family clothing stores, shoe stores.

FURNITURE, HOME FURNISHINGS, EQUIPMENT STORES (SIC 57). furniture stores, floor-covering stores, drapery, curtain, and upholstery stores, china, glassware, and metalware stores, household appliance stores, radio and television stores, music stores.

EATING, DRINKING PLACES (SIC 58). restaurants, lunchrooms, cafeterias, refreshment places, caterers, drinking places (alcoholic beverages).

DRUG STORES, PROPRIETARY STORES (SIC 591). drug stores, proprietary stores.

OTHER RETAIL STORES (SIC 59, excluding 591). liquor stores, book stores, stationery stores, sporting goods stores, bicycle shops, farm and garden supply stores, jewelry stores, fuel and ice dealers, florists, cigar stores, news dealers, photographic supply stores, optical goods stores, etc.

Current Dollar Output

Current dollar output is defined as receipts from customers for services rendered and merchandise sold, whether or not payment was received. Receipts of income from investments, rental of real estate, and

similar items are excluded. Beginning in 1954, state and local sales taxes and federal excise taxes collected by the establishment and paid directly to a tax agency are included. The only exception to this is motion picture theaters, for which taxes are included beginning in 1939. Sales of each of the ten retail trades were taken as the sum of each component kind of business. For total retail trade, output was derived by adding the margins (sales minus cost of goods sold) of the ten retail trades. The margins as a percentage of sales were derived from Internal Revenue Service tabulations for corporations in 1957, published in the *Statistics of Income, 1957-58, Corporation Income Tax Returns* and used for all years. It was determined that there were no significant differences between margins as a percentage of sales for corporations and all firms. The aggregation procedure is not sensitive to possible inaccuracies in the margin percentages.

Prices

Price indexes for all of the eight services, except hotels, are components of the U.S. Bureau of Labor Statistics Consumer Price Index. For hotels and motels, the average room rate for hotels in large cities was taken from Horwath and Horwath, *Hotel Operations in 1963*, p. 21. The drawback to this measure stems from the fact that it is affected by quality of room and extent of multiple occupancy.

For the ten retail trades, price indexes were supplied by David Schwartzman, who computed them primarily from components of the Consumer Price Index. Components of the Wholesale Price Index and other sources were also used. For each kind of business an index was obtained by weighting components by the share of commodity sales in 1948 given in the *Census of Business*.

Real Output

Real output was obtained by deflating current dollar output by the price indexes.

Employment

Employment is defined as the number of full-time equivalent wage and salary workers plus the number of proprietors. The number of proprietors in retail trade was adjusted for changes in coverage, as will be described. Proprietors were assumed to be full-time workers, as were employees in administrative offices, warehouses, and auxiliaries of retail stores. Wage and salary workers were converted into full-time equiv-

TABLE G-1

Output and Input in Selected Service Industries, Sectors and Total Economy, Selected Years, 1939-63

	Current Output (million dollars)	Price Index (1954 = 100)	Real Output (million 1954 dollars)	Employment (thousands)	Labor Compensation (million dollars)
<i>Auto Repair</i>					
1939	441	57.6	766	166.0	179
1948	1,561	79.6	1,961	246.2	612
1954	2,223	100.0	2,223	244.9	792
1958	3,853	111.9	3,443	378.2	1,357
1963	5,444	122.4	4,448	414.4	1,781
<i>Barber Shops</i>					
1939	231	39.9	579	186.3	177
1948	404	75.8	533	155.2	360
1954	552	100.0	552	147.3	430
1958	783	122.3	640	183.7	633
1963	907	139.5	650	180.3	753
<i>Beauty Shops</i>					
1939	250	50.2	498	190.3	139
1948	434	92.0	472	163.3	276
1954	654	100.0	654	168.0	367
1958	1,028	113.8	903	246.4	615
1963	1,618	125.7	1,287	345.2	1,028
<i>Dry Cleaning</i>					
1939	323	63.9	505	169.4	175
1948	1,128	86.6	1,303	303.7	654
1954	1,497	100.0	1,497	314.1	832
1958	1,671	110.5	1,512	311.8	942
1963	1,765	118.1	1,494	268.1	937
<i>Hotels and Motels</i>					
1939	900	46.1	1,952	360.0	280
1948	2,368	74.2	3,191	444.3	800
1954	2,862	100.0	2,862	440.2	1,015
1958	3,644	118.0	3,088	524.8	1,348
1963	4,667	128.7	3,626	544.2	1,637

(continued)

TABLE G-1 (continued)

	Current Output (million dollars)	Price Index (1954 = 100)	Real Output (million 1954 dollars)	Employment (thousands)	Labor Compensation (million dollars)
<i>Laundries</i>					
1939	528	52.7	1,002	281.7	268
1948	1,323	80.2	1,650	304.9	721
1954	1,605	100.0	1,605	329.2	828
1958	1,943	114.0	1,704	345.5	1,004
1963	2,493	133.1	1,873	346.5	1,196
<i>Motion Picture Theaters</i>					
1939	803	52.4	1,532	116.8	135
1948	1,614	85.8	1,881	170.2	314
1954	1,407	100.0	1,407	144.9	304
1958	1,172	116.9	1,003	134.9	291
1963	1,063	146.3	727	105.7	268
<i>Shoe Repair</i>					
1939	119	45.2	263	72.3	75
1948	219	88.2	248	64.1	159
1954	202	100.0	202	43.3	133
1958	232	115.4	201	44.7	157
1963	208	132.5	157	33.5	152
<i>Apparel, Accessory Stores</i>					
1939	3,259	49.2	6,628	421.3	583
1948	9,803	101.1	9,692	624.7	1,734
1954	11,214	100.0	11,214	646.4	2,108
1958	12,706	103.2	12,311	686.5	2,357
1963	14,204	108.2	13,129	658.8	2,623
<i>Automotive Dealers</i>					
1939	5,549	48.8	11,373	435.9	597
1948	20,104	89.6	22,432	694.9	2,248
1954	29,918	100.0	29,918	773.8	3,209
1958	31,824	110.4	28,833	792.7	3,488
1963	45,402	118.2	38,408	859.5	4,579

(continued)

TABLE G-1 (continued)

	Current Output (million dollars)	Price Index (1954 = 100)	Real Output (million 1954 dollars)	Employment (thousands)	Labor Compensation (million dollars)
<i>Drug Stores, Proprietary Stores</i>					
1939	1,562	66.2	2,360	225.4	288
1948	4,014	90.7	4,428	300.6	823
1954	5,252	100.0	5,252	316.2	1,053
1958	6,779	109.0	6,218	361.1	1,274
1963	8,487	112.6	7,537	364.6	1,550
<i>Eating, Drinking Places</i>					
1939	3,527	41.6	8,482	1,046.0	881
1948	10,683	92.4	11,560	1,567.4	3,064
1954	13,101	100.0	13,101	1,587.4	3,694
1958	15,201	110.0	13,818	1,819.8	4,275
1963	18,412	124.5	14,785	1,932.7	5,250
<i>Food Stores</i>					
1939	9,560	41.4	23,075	1,134.6	1,166
1948	29,438	93.0	31,654	1,327.1	3,526
1954	40,646	100.0	40,646	1,384.7	4,251
1958	49,693	106.1	46,823	1,481.5	4,883
1963	58,021	107.5	53,983	1,490.1	6,060
<i>Furniture, Home Furnishings, Equipment Stores</i>					
1939	1,798	54.5	3,300	255.0	365
1948	7,252	100.6	7,210	465.6	1,425
1954	9,450	100.0	9,450	483.1	1,868
1958	10,481	97.4	10,765	509.9	2,072
1963	11,481	95.9	11,972	459.4	2,229
<i>Gasoline Service Stations</i>					
1939	2,822	61.5	4,592	445.4	443
1948	6,483	85.9	7,549	446.8	1,084
1954	10,744	100.0	10,744	513.7	1,484
1958	14,178	108.0	13,128	654.3	1,926
1963	17,760	112.5	15,788	682.1	2,314

(continued)

TABLE G-1 (continued)

	Current Output (million dollars)	Price Index (1954 = 100)	Real Output (million 1954 dollars)	Employment (thousands)	Labor Compensation (million dollars)
<i>General Merchandise Group Stores</i>					
1939	6,475	51.9	12,478	849.1	982
1948	17,135	99.6	17,206	1,153.9	2,748
1954	19,241	100.0	19,241	1,229.4	3,300
1958	23,665	102.3	23,144	1,333.2	4,021
1963	31,937	105.1	30,381	1,433.9	4,979
<i>Lumber, Building Materials, Hardware, Farm Equipment Dealers</i>					
1939	2,735	44.7	6,123	301.4	403
1948	11,152	86.4	12,906	543.3	1,536
1954	13,366	100.0	13,366	539.2	1,887
1958	14,720	108.6	13,556	551.4	2,117
1963	14,792	112.1	13,199	466.2	2,119
<i>Other Retail Stores</i>					
1939	4,156	53.4	7,778	546.5	678
1948	12,930	92.2	14,025	678.8	1,816
1954	16,628	100.0	16,628	737.9	2,466
1958	19,872	105.4	18,856	847.0	2,868
1963	23,258	109.8	21,178	869.7	3,481
<i>Eight Services^a</i>					
1939	3,600	50.7	7,100	1,543	1,430
1948	9,050	80.5	11,240	1,852	3,900
1954	11,000	100.0	11,000	1,832	4,700
1958	14,330	114.7	12,490	2,170	6,350
1963	18,170	127.4	14,260	2,238	7,750
<i>Ten Retail Trades^a</i>					
1939	11,200	48.3	23,200	5,661	6,390
1948	34,260	93.9	36,480	7,803	20,000
1954	43,800	100.0	43,800	8,212	25,320
1958	51,710	105.9	48,820	9,037	29,280
1963	62,750	110.6	56,720	9,217	35,180

(continued)

TABLE G-1 (concluded)

	Current Output (million dollars)	Price Index (1954 = 100)	Real Output (million 1954 dollars)	Employment (thousands)	Labor Compensation (million dollars)
<i>Eighteen Selected Service Industries^a</i>					
1939	14,800	48.8	30,300	7,204	7,810
1948	43,310	90.8	47,720	9,655	23,900
1954	54,800	100.0	54,800	10,044	30,020
1958	66,040	107.7	61,310	11,207	35,630
1963	80,920	114.0	70,980	11,455	42,940
<i>Manufacturing^a</i>					
1939	—	—	47,700	10,100	14,700
1948	74,700	87.3	85,600	16,000	51,000
1954	106,200	100.0	106,200	16,800	74,400
1958	123,700	112.5	110,000	16,300	87,900
1963	167,000	115.7	144,300	17,400	114,500
<i>Service^a</i>					
1939	—	—	91,500	22,000	29,200
1948	113,500	85.0	133,500	26,500	76,100
1954	169,000	100.0	169,000	31,000	113,000
1958	219,300	113.4	193,300	33,200	145,700
1963	297,100	126.1	235,600	36,700	194,700
<i>Industry^a</i>					
1939	—	—	78,200	16,400	24,600
1948	121,200	87.1	139,100	25,300	82,100
1954	170,700	100.0	170,700	26,100	116,800
1958	202,600	111.9	181,100	25,500	138,800
1963	267,300	116.4	229,600	26,700	177,000
<i>Total Economy^a</i>					
1939	—	—	184,900	46,600	57,500
1948	258,700	88.8	291,700	58,800	172,200
1954	360,400	100.0	360,400	63,100	240,400
1958	443,900	111.6	395,500	63,700	296,000
1963	587,400	119.6	488,200	67,800	383,400

^a Output in current and constant dollars for these aggregates corresponds to gross product originating rather than to total sales, except for the eight services and for their portion of the eighteen selected services.

alents for 1948, 1954, and 1958 by assuming that the average hourly earnings of part-time workers were the same as the average hourly earnings of full-time workers in the same industry. The number of full-time workers was multiplied by the ratio of payroll of all wage and salary workers to payroll of full-time wage and salary workers. For 1939, the procedure was based on annual rather than weekly earnings, since payroll and employment data were available on an annual basis only. For 1963, the 1958 relation between the total number of wage and salary workers and the number of full-time equivalent wage and salary workers was used because the number of employees working the full workweek was not given. Because 1963 data on employees of administrative offices, warehouses, and auxiliaries were not yet published, they were assumed to be the same percentage of full-time equivalent wage and salary workers in 1963 as in 1958. Unpaid family workers are not included.

Coverage Adjustment

In retail trade, establishments with no paid employees were excluded from coverage in the *Census of Business* if receipts for the year did not exceed \$100 in 1939, \$500 in 1948, and \$2,500 in 1954 and 1958. In my earlier study¹ an attempt was made to adjust the count of proprietors to the 1939 coverage base. This adjustment was small, and because of questions concerning its accuracy was not adopted here. The count of proprietors is as reported in each Census.

Total Labor Input

Total labor input is measured by payroll of all employees. Payroll for the entire year was used throughout. The payroll of proprietors was obtained by assuming that labor input was equal to 90 per cent of OBE proprietors' income in all of trade and 95 per cent in services (see Appendix C). The average annual labor income per proprietor in each industry within trade or services was assumed to bear the same relation to every other detailed industry as average annual earnings of proprietors in 1959 according to the 1960 *Census of Population* 1/1,000 sample.

Sectors and Manufacturing

Methods and sources of data for the total economy, Industry sector, Service sector, and manufacturing are the same as described in Appendix C.

¹ *Productivity Differences Within the Service Sector*, New York, NBER Occasional Paper 102, 1967.

Because the Office of Business Economics series did not include 1939, estimates for that year were based on John W. Kendrick, *Productivity Trends in the United States*, Princeton University Press for NBER, 1961. The 1939–48 changes in Kendrick's series were applied to the 1948 real gross product for given major industry groups.