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Volume Author/Editor: John W. Kendrick, assisted by Maude R. Pech

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Chapter Author: John W. Kendrick

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APPENDIX J

Finance, Services, and Government Enterprises

Finance and Services

THE segment of finance, insurance, and real estate (which we shall call "finance") comprises SIC Major Groups 60 through 67, with the exception that the National Income Division has shifted Group 654, Title abstract companies, from finance to services. The service segment comprises SIC Major Groups 70 through 89 plus Group 654 with the exception of Major Group 75, Automobile repair services and garages, which the National Income Division includes with trade, and Major Group 77, Radio broadcasting and television, which is included with the utilities. The chief components of the service segment may be broadly characterized as personal services (including hotels and lodging places), domestic service, business and professional services (including private education), commercial amusement and recreation, and nonprofit membership organizations.

Employment and manhours were estimated separately for the finance and services segments, which comprise the great bulk of the "residual" area of the economy for which direct output and capital measures are not available. Output for the two segments combined was estimated indirectly for the period before 1929. Since 1929, real product originating in each of the two segments could be estimated. The output and input indexes and their ratios are shown in Appendix Table J-I.

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Employment. In the finance and services segments, the standard procedure was followed of using the Commerce Department estimates for employees and proprietors or self-employed, and inflating the latter to include unpaid family workers. The Commerce estimates of employment after 1939 are tied to Social Security data. Prior to 1939, in the financial segment, there is only one set of comprehensive benchmarks into which the estimates are tied: the 1935 censuses of *Banks, Financial Institutions other than Banks, Insurance, and Real Estate Agencies* (all are of the *Census of Business*). The estimates for 1935 were extrapolated to 1929; and interpolations between 1935 and 1939 were made on the basis of unpublished BLS series, National Bureau estimates,¹ and trade data. The proprietor estimates were based

¹ Cf. Simon Kuznets, *National Income and Its Composition, 1919-38*, New York (NBER), 1941, Vol. II.

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on either the industry censuses or *Census of Population* data. After 1940, extrapolations were generally based on the number of operating firms in the several industries of the segment. Extrapolations to earlier years were not firmly based; in real estate, for example, numbers of proprietors were extrapolated from 1929 to 1939 by the estimated number of full-time equivalent employees.

In the service segment prior to 1939, the employment estimates are largely tied into the *Census of Service Establishments* for 1933, 1935, and 1939, supplemented by censuses for selected service industries in 1929 (hotels, cleaning and dyeing establishments, etc.). The *Biennial Census of Manufactures* was used to obtain employees in motion picture production for 1929-39. Employment estimates for health and legal services were based on special questionnaire surveys conducted by the National Income Division. Employment in educational services was estimated from data contained in the *Biennial Survey of Education*. Employees of religious organizations were estimated from religious directories and the 1926 and 1936 *Census of Religious Bodies*. Employment in other nonprofit organizations was tied into the 1935 *Census of Nonprofit Organizations, Office Buildings, Miscellaneous*. Numbers of proprietors were likewise estimated from the industrial censuses and from data in the *Census of Population*, supplemented by data from trade and professional associations. Employment in domestic service was estimated from the *Census of Population*; and the concept used was that of number of persons engaged, rather than number of jobs.

Prior to 1929, the estimates of employment in finance were extrapolated for census years back to 1870 by the Census manpower estimates for the segment, adjusted to an employment basis. The chief alternative for the 1900-29 period was to use the estimates by Lebergott,² but these were based in part on labor force data and involve such broad assumptions that it is not at all certain that they portray the decennial movements more reliably than the Carson estimates for the segment. In any case, Lebergott's figures show practically the same movements for 1900-29, and 1920-29 as the Carson estimates with our adjustments, although Lebergott's 1910 estimate is somewhat lower.

The Lebergott estimates were used, however, to interpolate annually between census years. For banking, Lebergott multiplied annual data on the number of banks by average employment per bank—extrapolated by estimates for national banks made by the Comptroller of the Currency on selected dates and interpolated linearly. Building and loan association employment was extrapolated from 1935 back by using the number of associations and average employment extrapolated by the bank series. Brokerage employment was estimated by multiplying the number of

² Stanley Lebergott, "Estimates of Labor Force, Employment, and Unemployment, 1900-1950," unpublished MS., Appendix Tables 2 and 3.

self-employed brokers by the average number of employees per broker, interpolated linearly between 1910 and 1930. The numbers of self-employed stockbrokers were interpolated between census dates by trade information after 1920, and linearly before 1920. The ratio of all brokers to stockbrokers was ascertained for census years, and interpolated linearly. The estimates for brokerage were held constant between 1900 and 1910, since the growth in banking employment alone accounted for the entire growth shown by the Census category of banking and brokerage.

Gainful workers in the insurance industry at census dates were estimated by Lebergott on the basis of insurance agents. Intercensal interpolations were done on the basis of the number of life insurance policies. Self-employment was obtained by interpolating and extrapolating (prior to 1910) the ratios of self-employed to wage earners in years when the breakdown was available. Gainful workers in real estate were interpolated between census dates by the number of available nonfarm housing units, since agents are primarily concerned with the marketing and renting of houses. Ratios of self-employment to total employment were interpolated and extrapolated as in the case of insurance.

For 1900 and prior years, we combined the Census-based estimates of employment in finance and service industries and interpolated intercensal years by the relationship of employment to consumption expenditures for services (which include financial services) in the period from 1900 to 1929. These estimates were used merely for the purpose of obtaining annual employment estimates for the economy, and not for productivity comparisons.

As in finance, estimates of persons engaged in the service industries were extrapolated back from 1929 to 1870 by labor force estimates adjusted to an employment basis. The extrapolation was performed for two broad groups: domestic service, as estimated by Fabricant; and "other services," obtained by subtracting the domestic service estimates from the sum of the Carson estimates of domestic and personal service and of professional service and amusements.³

Annual interpolations were made on the basis of Lebergott's estimates plus annual estimates for employment in private education, which were not included by Lebergott in his series. When account is taken of employment in education and in nonprofit institutions, also excluded by Lebergott, the movement of his series is very close to that of the adjusted Carson estimates.

The Lebergott annual estimates were based on a variety of sources: professional directories; data on numbers of hotels and theatres; *Census of Manufactures* data for steam laundries and cleaning and dyeing establishments in part of the period; and interpolations by trade employment in

³ Cf. *Studies in Income and Wealth, Volume 11*, New York (NBER), 1949, pp. 42 and 47.

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hand trades, dressmaking, tailoring, and millinery shops. Our estimates of employment in private educational institutions were based on Office of Education data, biennial from 1918 forward and quinquennial from 1915 back, adjusted to a calendar-year basis and interpolated linearly. For domestic service, we followed Lebergott by interpolating linearly (except for 1910-20), on the ground that employment in this area is not affected appreciably by the cycle. Between 1910 and 1920, when employment of domestics declined, we again followed Lebergott by concentrating the decline in the war period, 1914-18, on the basis of the experience of World War II.

Lebergott's division of persons engaged between employees and proprietors was based largely on Census information and on interpolations of the ratios. We have accepted his distribution for 1900-29, making allowance for unpaid family workers as a proportion of proprietors. Prior to 1900, the distribution of total persons engaged by class of worker was based on the 1900 proportions.

Annual interpolation of the total (including domestic service) prior to 1900 was done in conjunction with finance, as described above. Separation of the two divisions was accomplished by applying to the total the ratios of each for census years, interpolated linearly. Estimates for other service were obtained by subtracting from total service the estimates of domestic service employment, which were interpolated linearly between census years.

Average hours and manhours. In the finance, insurance, and real estate segment, estimates of average hours are available for three periods. There are the estimates by King,⁴ based on a 7.4 per cent sample for 1920-22; the 1940 Census distribution of all employees in the segment by average hours classes; and special monthly tabulations from 1945 to date by the Census Bureau, based on the current population surveys.

We used averages of the monthly estimates (adjusted for the weeks containing holidays) for the years back to 1945. For 1943 and 1944, the pre-V-J Day figures in 1945 were used. The estimate for 1942 was an interpolation between the 1941 figure of 43.9 (assumed to be the same as the 1940 Census average) and the 1943 figure of 45.0. We also used the 1940 Census average for all years back to 1934, when the hours reductions under the codes of the National Recovery Act took full effect. This assumption of constancy seems more reasonable when it is observed that average hours worked in the financial segment remained remarkably stable after 1946, varying by no more than half an hour between 1947 and 1953. Also, the King estimates for 1920, 1921, and the first quarter of 1922 are virtually constant at 45.5 hours per week. We continued to hold this

⁴ Willford I. King, *Employment, Hours and Earnings in Prosperity and Depression, United States, 1920-1922*, 2nd ed., New York (NBER), 1923, p. 87.

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figure constant for the decade 1922-32. Since the NRA codes affecting average hours in the financial area were approved in the fall of 1933, we reduced the 1932 figure by only one-fourth of the difference between 1932 and 1934 in order to arrive at an average for 1933.

Finance is the area in which our ignorance as to average hours worked prior to 1920 is greatest, and it was necessary to extrapolate the 1920 figure by average hours worked in some other segment. Actually, the reduction of about five hours in the workweek in finance, or somewhat more than 10 per cent, between 1922 and 1953 was very close to that experienced by the private economy as a whole. It was considerably less than the reduction in hours of the service industry, which was at a higher level in 1920, but it was close to the manufacturing change, 1922-53; and the levels of average weekly hours in the two segments were close in 1922. Since it was computationally simpler to extrapolate by manufacturing hours rather than by those for the rest of the private economy as a whole, we have used the former device.

The special Census tabulation for 1953 revealed that average hours worked per week by employees and by the self-employed and unpaid family workers were virtually identical in finance. The same average hours estimates were therefore applied to both classes of workers.

To obtain manhours, the average hours estimates were multiplied by full-time equivalent employees plus self-employed and unpaid family workers and by weeks per year. As noted earlier, the Census average hours estimates are more applicable to full-time equivalents since part-time workers from other industries are not included, and part-time work by industry employees in outside industries would tend to offset part-time workers attached to the given industry. The King sample indicated that the average employee worked 99.6 per cent of full time;⁵ so his average hours estimates were taken as applicable to full-time equivalent employees.

Information regarding average hours worked by persons engaged in the service industries is somewhat better than that available for the finance segment, particularly in the early years. From 1920 forward, the sources and methods were much the same as in finance, except that the service segment was broken into two parts: domestic servants, and other than domestic service employees. From the special tabulations provided by the Bureau of the Census, we have annual averages of monthly estimates since 1945 for both divisions. Averages for 1943 and 1944 were assumed to be the same as in the pre-V-J Day part of 1945. For 1940, it was possible to compute average hours worked for each division from the Census hours distributions. In the case of other than domestic service, we held the 1940 figure constant in 1941, then interpolated 1942 linearly between 1941 and

⁵ *Ibid.*, Table XIV, p. 49.

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1943. Average hours worked by domestic servants were substantially higher in 1940 than in 1945. In this case, we interpolated linearly between the two estimates to obtain figures for the intervening years. The atypical behavior of domestic service with respect to average hours was paralleled by a steady decline in numbers employed during the war period.

From 1940 to 1934, we extrapolated the average hours estimates for both divisions, derived from the 1940 Census, by a weighted average of the BLS average hours estimates for three service industries: laundries, cleaning and dyeing plants, and year-round hotels.

It was then necessary to work forward from the 1920-22 estimates by King. Unfortunately, King's average hours estimates for services are presented in two mixed categories: domestic and personal, and public and professional. On the basis of the available state data, we decided that the approximately 56 hours shown for the former category in 1920 represented an average of about 60 hours for domestic servants (full-time basis) and 52 hours for personal service, with each receiving almost equal employment weights.

The change between 1920 and 1922 in each of these estimates was calculated in proportion to the change in average hours for the total category over the same period. Since our estimates of average hours for government employees were close to those shown by King for public and professional workers, we assumed that average hours for the category also applied to the professional group alone. Accordingly, these estimates were combined with the average hours estimates for personal service, using as weights the relevant manpower estimates of Carson.⁶ In going forward, we assumed for both divisions the same reduction of two hours between 1920 and 1929 that was used by Barger for the trade segment. Between 1929 and 1934, the average hours estimates were interpolated linearly.

Prior to 1920, our chief reliance was on reports by eight states which canvassed average hours worked for all or part of the period 1870-1920. In addition to domestic service, information was available for hotels, laundries, barbers, shoemakers, tailors, blacksmiths, cabinet makers, and musicians. We computed unweighted averages of the data by state and by category, using interpolations in some instances, rounding the results for decennial years, and interpolating linearly between the decennial years. The results are obviously not precise, but they should give at least a rough picture of trend in an area in which no estimates are available from secondary sources.

As in finance, the average hours estimates were multiplied by the number of full-time equivalent employees and 52 to obtain manhours.

⁶ *Op. cit.*, pp. 59-60.

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The numbers of proprietors and unpaid family workers (present only in the nondomestic services) were multiplied by the same hours series, raised by 15 per cent. The raising ratio was based on the results of the special Census Bureau tabulation for May 1953.

Within the services segment, manhours worked by domestic servants and by other persons were weighted by average hourly compensation in pairs of key years beginning with 1919 in order to derive labor input. The same procedure was followed in combining labor input in the services segment with manhours in the finance segment in order to get labor input for the two segments in combination (see Table J-I).

OUTPUT

It is possible to spell out approximately the implications of deflated GNP with respect to the real product originating in the finance and service segments. As in construction, for the period since 1929 we added to the Commerce Department industry national income estimates, the finance and service industry portions of depreciation, indirect business taxes, and other (minor) items reconciling income and product. The industry gross national product estimates so obtained were then deflated for each segment by the implicit price deflators for the aggregates of financial and of other consumer services included in GNP.

As discussed elsewhere,⁷ this procedure involves two assumptions. One is that the prices of the financial and other services rendered to business move with the prices of services to consumers. Since many of the services performed for individuals and for businesses are of the same type, and since consumer services predominate in any case, the assumption should not produce appreciable distortion. A more important possible source of error is the spotty coverage of the price indexes for consumer services.⁸ The other assumption is that the prices of the intermediate inputs into the segments move with the output prices. Since intermediate-product inputs are probably of minor importance in the finance and service segments, this assumption should also not be a source of major error. It is hoped that the several possible sources of error in the real-product estimates tend to be offsetting.

Real-product estimates for the combined finance and service segments for 1889-1929 were derived as a residual by deducting the real-product or gross output estimates (with real-product weights) for the other segments from the total real-product estimates for the private domestic economy.

⁷ John W. Kendrick, "The Estimation of Real National Product," *A Critique of United States Income and Product Accounts*, Studies in Income and Wealth, Volume 22, Princeton University Press (for NBER), 1958.

⁸ See *National Income Supplement, 1954*, Survey of Current Business, Dept. of Commerce, Part IV.

The estimating procedure and possible sources of error involved are discussed in the Appendix A section: "Comparison of Real Product with an Aggregate of Industry Output." Reasons were given there for believing that the residual and total real-product estimates for 1869-89 were not reliable enough for this study; but the estimates for the period since 1889 seem plausible. The fact that the sum of the industry output estimates moves closely with real GNP, 1929-53, is a check for the later period on the accuracy of the computation of real product in finance and services (see Table A-3).

The labor productivity estimates for finance and services shown in Table J-I provide another basis for appraisal of the output estimates. Output per unit of labor input in the combined segments increased at an average annual rate of slightly under 1.5 per cent between 1889 and 1929 and slightly more than 1.5 per cent between 1929 and 1953. Finance and services each showed a 1.5 per cent average annual rate of advance in the later period. These trend rates, which are significantly under the average rates of advance in the private economy as a whole, accord with the general impression that technical advance has not been as strong in the finance and service areas as it has been in the commodity-producing and the utility industry segments. The real-product and productivity estimates for the services segment are probably on the low side, however, since the deflators for domestic service and nonprofit institutions make inadequate allowance for possible efficiency gains in these areas.

There is considerable variability in rates of change in the subperiods, but it is not much greater than in other segments. The variations can be rationalized, but they undoubtedly reflect in part margins of error in the estimates which may affect the subperiod movements to a greater extent than the long-period trends.

Government Enterprises

This section covers those businesslike enterprises, created by governments, which make a direct charge for their services and operate on predominantly commercial principles. They are thus distinguished from "general government" and are treated by the Commerce Department as part of what we call the private economy.

The Post Office Department overshadows the other government enterprises, accounting for approximately 284,000 full-time equivalent employees out of a total of 409,000 in 1929. For the Post Office, we have extended existing estimates of the physical volume of output, as well as of employment and manhours worked. For the other enterprises, employment and manhours were estimated for the purpose of obtaining national aggregates, but output measures were not practicable.

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Post Office. For 1896–1948, a series on full-time equivalent numbers of employees in the Post Office Department is available in the Fabricant study.⁹ Fabricant excluded temporary employees and certain classes of part-time employees, contractors, and contractors' employees. Temporary employees were unimportant before 1940, but have increased relative to full-time workers in more recent years. This leads to some understatement in the Fabricant series as extended by the same methods, but not enough to affect the secular comparisons for which the employment totals are used. Total employment was reduced to full-time equivalents by reducing by three-fourths the number of fourth-class postmasters and third- and fourth-class clerks. This procedure was based, in part, on the evidence of earnings ratios.

Prior to 1896, full-time equivalent employment was extrapolated by the number of postmasters and city carriers (representing about 45 per cent of employment in 1896). This involves the assumption that the ratio of full-time equivalent employees to total postal employees remained unchanged in the early years.

Postal employees worked a standard 48-hour week until 1931. In 1932 the standard workweek was reduced to 44, and in 1936, further reduced to 40 hours, according to Civil Service Commission reports. Our average hours series is based on these data, and a further adjustment was made to the estimate for 1952 to take account of increased annual holidays and paid sick leave.

Since the average hours series is on a full-time basis, it was multiplied by the index of full-time equivalent employees in order to arrive at the manhours index. In computing the absolute number of manhours for combination with manhours worked in other industries, a deduction was made for the proportion of hours estimated as paid for but taken as leave (see Appendix K for the study on which the deduction was based).

Other government enterprises. From 1929 forward, employment in federal government enterprises other than the Post Office was estimated from the total presented in the *National Income Supplement, 1954*, by subtracting consistent estimates of the number of Post Office employees. Although other enterprise employment grew rapidly during the first years of the "New Deal," and again in World War II and after the Korean outbreak, it was not important prior to 1929. The chief enterprises in the earlier years were the Panama Canal corporations and the War Shipping Board.

⁹ Solomon Fabricant, *The Trend of Government Activity in the United States since 1900*, New York (NBER), 1952, pp. 176–77 for the years through 1948; 1949–53, extended by methods used in his study.

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Employment in such enterprises prior to 1929 was obtained from the annual reports of the Civil Service Commission and was traced back to the formation of the Isthmian Canal Commission in 1904. Prior to this date, federal enterprises other than the Post Office were apparently nonexistent or negligible.¹⁰

To calculate manhours, it was assumed that hours worked in the other federal enterprises were the same as those worked by employees in federal civilian general government (see Appendix K).

State and local government enterprises consist primarily of water, gas and electric utilities, and, since 1933, state liquor stores. The Commerce Department estimates were used for the years since 1929. These were extrapolated to 1909 by the estimates of King,¹¹ which were based on Census Bureau data contained in *The Financial Statistics of Cities* and in various state reports. The King estimates check closely with the later Census estimates of state and local government utility and liquor store expenditures,¹² deflated by the average earnings of state and local government nonschool employees (Appendix K) on the assumption that payrolls are a relatively stable proportion of total expenditures. The deflated Census series was used to extrapolate the employment estimates back to 1902.

On the basis of the Census breakdown of expenditures, it was assumed that about 10 per cent of enterprise employment was in publicly owned electric utilities. This portion was extrapolated back to 1889, when the industry virtually began, on the basis of total employment in electric utilities (Appendix H). Most of the remaining employment was in water works, and this was extrapolated from 1900 to 1880 on the basis of Kuznets' estimates of the real value of fixed capital in this category.¹³ It was further extended to 1870 on the basis of the 1880-1900 trend. Because of the very small size of the figures in the early period, interpolations between benchmarks from 1870 to 1909 were performed linearly.

It was assumed that average hours worked per week in the state and local government enterprises were the same as in the private electric and gas utilities. Since the number of part-time workers relative to total employment in the private utilities is negligible, the average hours estimates were multiplied by estimated full-time equivalent employees to arrive at total manhours.

¹⁰ *Ibid.*, Table B-16, p. 201.

¹¹ Willford I. King, *The National Income and Its Purchasing Power*, New York (NBER), 1930, p. 361.

¹² *Historical Statistics on State and Local Government Finances, 1902-53*, Bureau of the Census, Special Studies No. 38, 1955.

¹³ Simon Kuznets, *National Product since 1869*, New York (NBER), 1946, p. 231.

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POST OFFICE OUTPUT

The initial estimates of the physical volume of services performed by the Post Office were made by Witt Bowden.¹⁴ His estimates for 1908, 1910, 1912, and 1926-31 were incorporated in the work of Fabricant.¹⁵ The extension of the Bowden output index to 1940, shown by Fabricant, was based on estimates in an unpublished study of the National Research Project of the Works Progress Administration, in which the Bowden method was used, and we have likewise followed Bowden in bringing the index up to 1953 (see Table J-II).

Bowden's index represents a weighted aggregate of the number of pieces of mail handled or the number of other transactions performed by the Post Office, by type. The weights are based on the estimated amount of labor involved in performing a unit of each of the various services. Table J-1 shows the types of services for which separate quantity data are

TABLE J-1
Post Office: Relative Weights of Services Included in Bowden Index

Type of Service ^a	Weight
Mail Services	
All matter except fourth class	1.0
Fourth-class matter	8.2
Special Services	
Registration	15.3
Money order transactions	8.1
Special delivery	6.7
C.O.D. transactions	12.5
Insurance	5.2
Postal Savings, depositors	156.0

^a A broader range of service categories is contained in recent issues of *Annual Report of the Postmaster General* (see Henry D. Lytton, "Recent Productivity Trends in the Federal Government," *The Review of Economics and Statistics*, November 1959).

available and the relative weights used for combining the several series. Labor-time required in handling ordinary letters and circulars per piece is the base upon which the other weights were computed.

Estimates for intervening years, 1908-12, and the years from 1908 back to 1886 were interpolated and extrapolated by the total number of pieces

¹⁴ *Technological Changes and Employment in the United States Postal Service*, BLS Bulletin 574, December 1932, p. 52.

¹⁵ *Op. cit.*, p. 257.

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of mail handled.¹⁶ The index for this series was compared with the weighted index from 1933 to 1939, and the maximum difference was 0.5 percentage point. No data were available for "pieces of mail" from 1914 to 1922 and prior to 1886, except for 1847. An estimate for 1919 was interpolated between 1914 and 1922 from the volume of ordinary postage stamps issued, and an estimate for 1879 was obtained from a logarithmic trend line between 1847 and 1886. A two-year moving average of the fiscal-year figures was taken in order to adjust the estimates to a calendar-year basis.

TABLE J-I
 Finance and Services:
 Output, Labor Inputs, and Productivity Ratios, Key Years, 1889-1953
 (1929 = 100)

	Output	Persons Engaged ^a	Output per Person	Manhours ^a	Output per Manhour	Labor Input	Output per Unit of Labor Input
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1889	17.9	32.3	55.4	42.5	42.1	32.2	55.6
1899	33.6	42.9	78.3	54.4	61.8	44.3	75.8
1909	56.0	59.8	93.6	71.5	78.3	60.8	92.1
1919	71.7	65.9	108.8	69.6	103.0	66.3	108.1
1929	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1937	89.2	98.7	90.4	92.4	96.5	96.1	92.8
1948	132.0	116.7	113.1	93.4	141.3	102.6	128.7
1953	162.6	127.2	127.8	100.4	162.0	111.1	146.4
FINANCE							
1929	100.0	100.0	100.0	100.0	100.0		
1937	84.4	96.6	87.4	93.2	90.6		
1948	142.1	122.0	116.5	109.1	130.2		
1953	178.1	140.4	126.9	125.2	142.3		
SERVICES							
1929	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1937	94.6	99.3	95.3	92.2	102.6	97.2	97.3
1948	125.7	115.4	108.9	90.1	139.5	100.5	125.1
1953	152.4	124.0	122.9	95.3	159.9	106.5	143.1

^a Absolute numbers of persons engaged and of manhours are given in Tables A-VII and A-XI. The services segment is further broken down into two groups; relevant data for the base year, 1929, are (in millions):

	Persons Engaged	Manhours
Domestic service	2,348	7,021
Other service	4,280	11,183

¹⁶ *Statistical Abstract of the United States, 1955*, Dept. of Commerce, p. 518; and earlier volumes.

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TABLE J-II

Post Office:
Output, Labor Inputs, and Productivity Ratios, 1879-1953
(1929 = 100)

	Output	Persons Engaged ^a	Manhours ^a	Output Per Manhour
1879	5.8		16.7	34.6
1889	11.3		26.3	43.0
1899	19.8		35.4	55.9
1909	42.3		66.1	64.0
1919	71.8		78.5	91.5
1929	100.0	100.0	100.0	100.0
1930	97.6	100.6	100.6	97.0
1931	89.9	100.3	100.3	89.6
1932	78.1	98.9	90.7	86.1
1933	72.5	95.7	87.8	82.6
1934	76.5	93.7	85.9	89.1
1935	81.8	93.4	85.6	95.6
1936	88.2	99.0	82.5	106.9
1937	92.0	100.8	84.0	109.5
1938	92.9	102.8	85.6	108.5
1939	95.6	103.9	86.5	110.5
1940	100.2	106.3	88.5	113.2
1941	105.4	109.4	91.1	115.7
1942	112.5	111.6	93.0	121.0
1943	120.9	107.6	89.6	134.9
1944	127.5	109.8	91.5	139.3
1945	128.8	112.7	93.9	137.2
1946	130.6	120.3	100.2	130.3
1947	138.7	122.6	102.1	135.8
1948	148.8	134.3	111.9	133.0
1949	155.4	142.9	119.0	130.6
1950	159.8	147.9	123.2	129.7
1951	167.4	143.1	119.2	140.4
1952	172.8	144.6	117.6	146.9
1953	174.4	147.2	119.7	145.7

^a Number of full-time equivalent employees in 1929 is estimated at 284,000, and manhours worked, at 651,000,000.